

**REPORT OF THE WORKING GROUP ON
AGRICULTURAL MARKETING INFRASTRUCTURE,
SECONDARY AGRICULTURE AND
POLICY REQUIRED FOR INTERNAL AND EXTERNAL TRADE**

FOR THE XII FIVE YEAR PLAN 2012-17

**AGRICULTURE DIVISION
PLANNING COMMISSION
GOVERNMENT OF INDIA**

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CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

As part of the exercise for the preparation of the XII Five Year Plan (2012 - 17), the Planning Commission of Government of India constituted several Working Groups on different aspects of agricultural and allied sectors. One of the Working Group was on Agricultural Marketing Infrastructure, Secondary Agriculture and Policy required for Internal and External Trade. This Working Group was constituted vide Order No.
dated of the Planning Commission (Agriculture Division) of Government of India.

Objectives of the Working Group

- ☐ To empower the farmers to get a higher realization for their produce and a better share of the consumers' price;
- ☐ To improve efficiency in the marketing chain and reduce transaction costs;
- ☐ To reduce wastages; and
- ☐ Use secondary agriculture like bio-mass and residue utilization to improve overall economics.

1.2 TERMS OF REFERENCE OF THE WORKING GROUP

1.3 COMPOSITION OF THE WORKING GROUP

Members

- Mr Gokul Patnaik, Global AgrisSystem – Chairman of the Working Group
- Dr P G Chengappa, Forcer Vice-Chancellor, University of Agricultural Sciences, Bangalore
- Dr Sukhpal Singh, Professor, IIM, Ahemedabad

- Joint Secretary (Marketing), New Delhi
- Joint Secretary (Trade) DAC, New Delhi
- Joint Secretary (trade Policy- agriculture) Ministry of Commerce, New Delhi
- Mr A L Meena, Joint Secretary, Department of Food Processing Industries
- Managing Director, NABARD, Mumbai
- Chairman, APEDA
- Managing Director, NHB
- Mr Rakesh Bharti Mittal, Chairman, CII National Council on Agriculture
- Chairman, Forward Market Commission
- Managing Director, Central Warehousing Corporation
- Mr Govindan Nair, Managing Director, NCDC
- Commissioner & Director of Marketing, Government of Andhra Pradesh
- Mr Pravesh Sharma, Managing Director, Small Farmers' Agribusiness consortium
- Mr Ajmer singh Lakhwal, Chairman, Punjab Mandi Board
- Dr S K Goel, Principal Secretary, Cooperation and Marketing, Govt of Maharashtra
- Chairman of Gujarat State Agriculture Marketing Board
- Managing Director, Karnataka State Agricultural Marketing Board
- Director of Mandis, UP Rajya Krishi Utpathan Mandi
- Secretary Agriculture, Government of West Bengal
- Mr Sushil Goenka, President Solvent Extractors' Association of India
- Dr Anurag Bhatnagar, Former DG, NIAM, Jaipur
- Adviser (Agriculture), Planning Commission
- Director General, NIAM, Jaipur (Member Secretary)

The Working Group was authorized by the Planning Commission to co-opt any other official/non-official Expert/representative of any organization as members, if required.

Co-opted Members

- Mr Sopan Kanchan, Managing Partner, Mahagrapes
- Mr R S Seshadri, Director, Tilda Rice Land Pvt. Ltd.

- Mr Sanjeev Asthana, I-Farm Venture Advisors Pvt. Ltd.
- Mr Amardeep Singh Cheema, Progressive Farmer
- Mr Sanjay Kaul, Managing Director & CEO, National Collateral Management Services Limited
- Mr Pranav Adani, Executive Director, Adani Wilmar Ltd.
- Mr Roshan Lal, FC & PS Agriculture, Govt. of Haryana,
- Mr K.V. Satyanarayana, Ex. DG, National Institute of Agricultural Extension Management, Hyderabad
- Mr Bala Prasad, CEO (Department of AYUSH)
- Mr Anjani Sinha, Managing Director & CEO, National Spot Exchange Ltd.

1.4 CONSTITUTION OF SUB-GROUPS

The Working Group constituted the following 11 Sub-Groups to look into specified terms of references of each Sub-Group.

Topic	Chairman
Physical markets	Mr Sanjeev Asthana
Virtual Markets	Mr B C Khatua
Alternative Marketing Models	Dr S K Goel
Warehousing & Bulk Handling	Mr Sanjay Kaul
Training & Capacity Building	Dr Anurag Bhatnagar
Value Addition	Dr P G Chengappa
Bio-mass Utilization	Dr Sukhpal Singh
Medicinal & Aromatic Plants	Mr Bala Prasad
Innovation & Institutional Support	Mr Pravesh Sharma
Barriers to Internal Trade	Mr Gokul Patnaik

1.5 METHODOLOGY ADOPTED BY THE WORKING GROUP

The Working Group was authorized by the Planning Commission to devise its own procedures for conducting its business including its meetings. The Working Group accordingly conducted several meetings to discuss the modalities of the Report.

The working Group had Six Meetings as below:

- Ist Meeting on 6th May 2011 at Delhi
- IInd Meeting on 7th July 2011 at Delhi
- IIIrd Meeting on 28th July 2011 at Delhi
- IVth Meeting on 4th August, 2011 with Secretary,
Department of Food & Public Distribution at Delhi
- Vth Meeting on 11th August 2011 at Chandigarh
- VIth Meeting on 5th October, 2011 at Delhi

In these meetings, the Group discussed the areas to be focused upon and the expectations of the Planning Commission from this Working Group. A comprehensive discussion was held on the current status of marketing system and relevant issues related to the ToR of the Group.

The members of the Working Group shared their views on the approach to the marketing system improvements during the XII Five Year Plan. The ToR of the Working Group were reviewed and some of these were elaborated and some additions were made. Finally, 11 Sub-Groups were constituted by co-opting some Experts/Senior Officers and ToR for each Sub-Group were specified.

Besides the above, each Sub-Group had number of meeting separately and held intensive discussions o prepare respective draft reports. These apart,

several government reports, secondary data and other documents were reviewed by the Chairman/convenors, Member-Secretaries and other officers of concerned Ministries, Departments or organizations for providing inputs to the Sub-Groups. The members of the Group also sent/provided notes/inputs/views to the Sub-Groups, which were of great help in preparing the reports and recommendations of the Sub-Groups. Each Sub-Group also elicited feed back and opinions on the terms of reference from all State Governments/State Mandi Boards, Research organizations and related departments of Government of India. The Sub-Groups also obtained views of various Boards and other such organizations related to agricultural marketing.

1.6 STRUCTURE OF THE REPORT

The report is presented in nine chapters. The first chapter includes composition and ToR of the Working Group, constitution of the Sub-Groups and their ToRs, and the methodology adopted by the Working Group in finalization of its report and recommendations. The existing agricultural marketing system is reviewed and analyzed in the second chapter. The prospects of alternative marketing models are explored in the third chapter. Chapter 4 presents the innovations and institutional support in for empowering the farmers. Chapter 5 deals with improving efficiency and reducing transaction cost in Agricultural Marketing by strengthening the physical markets, encouraging virtual markets and training and capacity building programmes. A review of post harvest losses and reducing wastages by warehousing and bulk handling are presented in Chapter 6. Seventh chapter is devoted to secondary agriculture. The issues relating to biomass and residue utilization, potential of alternate crops and medicinal and aromatic plants are discussed in this chapter. Chapter 8 covers the Trade Policy including barriers to internal trade and infrastructure and policy support for external trade. The recommendations of the Working group are compiled in Chapter 9. The proposed outlay is presented in Chapter 10.

CHAPTER 2

AGRICULTURAL MARKETING SYSTEM

Current Scenario:

More than three-fifths of India's population draws their livelihood from agriculture that adds just one-fifth to its GDP. There should be obvious serious concerns about efficient functioning of this sector both in terms of its output / productivity and its marketing. While output and productivity are supply side factors, markets provide an intermediate link between producers and final demand by consumers. Efficiently functioning markets add to welfare of producers as well as consumers. Interventions in domestic agricultural markets can affect the efficient allocation of resources negatively thus making domestic agricultural sector less competitive in international markets. This effect can get further magnified through interventions in the border trade policies. Efficient agricultural markets can also be a potent tool for poverty reduction.

In India, farmers' produce is generally disposed off in the village, rural / primary market or secondary agricultural market. The number of regulated (secondary) agricultural markets stood at 7,157 as of March 2010 as compared to just 286 in 1950. There are also about 22,221 rural periodical markets, about 15 per cent of which function under the ambit of regulation. Average area served by a market is 115 sq. km while an average area served by a regulated market is 454 sq.km (varies from 103 sq km in Punjab to 11,215 sq km in Meghalaya). According to recommendations by National Farmers Commission, availability of Markets should be within 5 km radius (approx. 80 sq km) (2004).

Regulated markets are managed by Agricultural Produce Market Committees or APMCs, though in some states they may be given different names such as Agricultural Market Committees (AMCs) in Andhra Pradesh, Regulated Market Committees (RMCs) in West Bengal and so on.

Regulatory barriers have constrained investments in development of storage and processing, hampered the development of effective market institutions, and lowered the capacity of agricultural producers to be internationally competitive. India, for example, is the world's largest producer of fruit and vegetables but inadequate post-harvest storage and transportation cause losses of around 30-40 per cent, only 7 per cent value addition takes place, and only about 2 per cent of production is processed commercially (Government of India, 2001). As a result a broad consensus has emerged about the need for reforms in agricultural market policies and quite significant reforms have been implemented in recent years, as part of the ongoing policy reform process in India.

Linking small primary producers with markets has been identified as one of the major issues in policy and practice in improving livelihoods for millions of poor in the developing world. Small producers have many competitive advantages like lower cost because of family labour abundance, higher capability in working capability, and traditional knowledge that can be harnessed for many sectors. The only threats they face are: the demand for standardized products in global and national markets. But there are opportunities in organic, fair and ethical trade markets that are particularly suited for small producers and offer higher prices.

On the other hand, private agencies also stand to gain from small-producer linkages when the focus is not just on profits, private agencies can leverage this smallholder linkage by way of political and social legitimacy. Besides, dealing with small producers can lower costs as compared to dealing with larger ones, and smaller producers are generally easier to manage. Typically, farmers complain a lack of market for their produce, while processors, exporters or supermarket retailers complain of a lack of adequate supplies of quality produce. This marketing paradox is present because often, buyers do not reach out to explore new suppliers or farmers lack an understanding of markets as well as the ability to identify new markets or to take advantage of such opportunity with value addition activities like grading, cleaning, sorting, packaging and primary processing.

Globally, and more so, in the developing world, including India, in numerous types of market linkage arrangements, success depends on the market and the

efficiency of operations. Some offer higher price opportunities for growers, while others offer lower marketing costs, thus increasing producer profit margins either way. But, most of these arrangements, especially indirect ones, do not ensure that small growers are part of these arrangements. Many market linkage arrangements just provide another alternative to the primary sellers without any commitment to buy or add value as is the case with most fresh F&V retail chains in India which procure only 'A Grade' produce without any contract and the producer is left to sell the rest of the produce in other channels. Most of these channels also deal with individual growers and there have just been only few attempts by private corporate players encouraging the formation of grower groups or associations through the producer company route in India.

Major issues and concerns

- Too many intermediaries resulting in high cost of goods and services
- Inadequate infrastructure for storage, sorting, grading or post-harvest management
- Private sector unwilling to invest in logistics or infrastructure under prevailing conditions
- Price setting mechanism not transparent
- Mandi staff ill-equipped and untrained
- Market information not easily accessible
- EC Act impedes free movement, storage and transport of produce

Condition of Existing Market

- Primary or Periodic Markets (*haat / bazaars*) are most neglected – basic amenities not available
- Condition of cattle markets most appalling
- Low density of regulated markets in some States- farmers have to travel long distances

- Weak governance of APMCs - management not professional
- Licensing systems creates entry barrier to new
trader / buyers
- Multi-Point Levy of Market Fee (Varies from 0.5 to 2%) and Multiple Licensing System
- Restrictions on movement of goods inter-state and even intra-state

Gaps in Marketing Infrastructure

- NHM- only 11 States have taken initiative in establishing 109 cold storages and eight states have established 51 *apni mandis*, there is virtually no progress in the setting up of wholesale markets except in Kerala
- Wide gap between rural tele-density (30.18 per cent in November 2010) and urban tele-density (143.95 per cent in November 2010).
- Only 1637 grading units at the primary level, which include 125 units with cooperatives and 144 units with others
- Regulated markets, there are only 1368 grading units in a total of 7246 market yards/sub-yards.
- Only around seven percent of the total quantity sold by farmers is graded before sale
- Scientific storage capacity is only 30 per cent of the required capacity.
- Cold storage facility is available for only 10 per cent of fruits and vegetables

Need for Reform in Agricultural Marketing

- **Empower producers** with knowledge, information & capability to undertake market-driven production.
- **Provide Multiple Choice** and competitive Marketing Channels to farmers.
- **Attract Large Scale investments** needed for building Post-Harvest infrastructure.

Linking Small Farmers to the Market

Strategies on the following principles to extend help to smallholder agriculture and disadvantaged producer groups. The Plan:

- aim to improve the terms of trade of small producers with the market
- address risks faced by small producers and help to reduce them
- recognize the importance of small producers in the value chain and facilitate their inclusion in the wider economy
- target the moving small producers further up the value chain to increase their returns on investment and their economic security.

It is in this background that the alternative marketing models are needed to be explored during the 12th Five Year Plan

CHAPTER 3

ALTERNATIVE MARKETING MODELS

An analysis of various alternative models:

India has made many strides on production front but awfully lacking in the field of agricultural marketing. These inadequacies are becoming more acute with the significant changes taking place in agri-food systems in domestic and overseas markets; the attainment of competitiveness is becoming increasingly dependant on the capacity of the country to develop effective and efficient agricultural marketing. Presently agricultural marketing system in India suffers from number of constraints which are either infrastructure related or government regulation related or technology related or related to poor information on domestic and overseas markets and opportunities or related to unstable and uncertain produce prices or related to delayed and late payment to producers and finally related to low producer's realization.

The existing marketing infrastructure in the form of Rural Primary Markets, regulated wholesale and assembling markets, grading and quality control systems, retail markets, storage including cold chain infrastructure, infrastructure required for linking the commodity futures with the farmers, perishable cargo centres, rural farm road infrastructure, market information infrastructure, infrastructure for livestock markets, poultry and livestock meat markets, slaughter house facilities and quality assurance infrastructure of various agricultural commodities is far below the desired / required levels both in terms of capacity as well as quality of the facilities. This infrastructure is also inadequate to realize the potential competitiveness of multiple commodities for taking them to the global markets.

Alternate Marketing Systems: Indian producers are unable to realize optimal value from their produce and progress further due to fragmentation of land holdings and lack of grass-root level organizations. On the other hand, processors are not in a position to get quality raw material in right quantity.

Besides the share of producer in consumer price is abysmally low due to the presence of middlemen. To overcome these problems, direct marketing, contract farming, direct linkage with Retailers/ Processors/ Exporters and market oriented production are some of the approaches. Recently many initiatives have been taken by NABARD and other organizations to promote and involve Self Help Groups, Joint Liability Groups, Farmer clubs, Farmer Federations, SHG Federations, Producer organizations such as Producer Companies, Producer cooperatives, etc in direct marketing of the farmers' produce for better price realization.

Government Initiatives: To promote direct interactions of producers with consumers in fresh produce, there have been farmers' markets in India in the form of *Apni Mandis* in Punjab, *Rythu Bazaars* in Andhra Pradesh, *Uzhavar Santhai* in Tamil Nadu, and *Shetkari Bazaar* in Maharashtra, promoted by state agencies. Farmers' markets have helped participating farmers to become aware of the products required by the markets and helped farmers to improve product quality and diversify their product portfolios, besides bringing about resource use maximization. However, farmers' markets have not had a major impact on farm incomes as sales through this marketing channel are generally small, both in terms of number of the farmers participating and volumes of produce. The more significant govt. initiatives include Horticultural Producers' Coop. Marketing & Processing Society (HOPCOMS – a cooperative) in Karnataka and SAFAL F&V project of National Dairy Development Board (NDDB) in Bangalore.

Producer Groups / Farmer Groups (PG / FG) – Producers' Associations (PAs) – Farmer Common Service Centers (FCSCs): Group Activity is more effective for the benefit of the members of the group than the individual efforts. Informally formed small groups called as self help groups have exhibited their strengths in various fields including agriculture, in improving financial conditions of the members. Farmer Common Service Centers (FCSCs) are conceptually small scale commercially viable entities owned by Producers' Associations (PAs). The FCSCs will support 250-300 members, through Producer Groups / Farmer Groups of around 12-19 active members in each Producer Groups (PGs). Around 15-20 PGs in a village or a group of villages within the radius of 3-5 Kms.

can be federated in to a PA which will be registered under the Society Registration Act, 1860 with the Charity Commissioner to have the legal status / other suitable Acts. The FCSC can mainly deliver some basic value added activities, in grain and horticulture and carry out input and output marketing. This could involve supply of inputs like seeds, fertilizers, manures, pesticides, cattle feed to the members & farmers and also could help in aggregation of produce, its cleaning, grading & marketing.

The following illustrative options could be available to the members of the PAs after using the services provided by the FCSCs: (i) Take their produce to a State Agencies Warehouse or to APMC warehouse or sell in APMC. (ii) Obtain finance against their produce through the Warehouse Receipt Financing from banks for the produce store in the State Warehouse or other accredited warehouses. (iii) They can sell the produce on spot or future market depending on price situation known through the warehouses. (iv) The produce can be sold to direct marketing license holder who may be a trader, exporter, processor or retail chain operator. An estimate of the potential additional returns that farmers can obtain by using the FCSC for their producer association to grade, clean and pack grain and to facilitate marketing through the Mandi, the Spot Market at a warehouse facility, or to store at warehouse for three month contrasted with the returns for a farmer selling un-graded produce through the Mandi shortly after harvest shows higher returns to the farmers as 5%, 10% & 15% respectively.

Pledge Loan linked to Warehouse Development: Availability of finance against stored produce and improved knowledge on price risk management allows farmers and farmers' organizations to obtain better price realization for their produce. In addition, trading through Electronic Commodity Exchange provides an alternative marketing channel, which increases potential for better price realization. With the amendment of the APMC Act in states, establishment of Electronic Spot Markets that allow online trading through electronic commodity exchanges (outside APMCs and across state boundaries) have become possible. The three national commodities exchanges, namely, the National Commodity and Derivative Exchange Limited (NCDEX), the Multi Commodity Exchange Limited (MCX), and National Spot Exchange Limited (NSEL) are in the process of setting

up systems that make this feasible. This provides the farmer with the choice of other marketing channels, which are lower in cost, transparent in processes, prices and quality assessment, provide assured payment and which enable farmers to store produce and take advantage of warehouse credit, futures markets and electronic spot exchanges.

Representatives of the PAs handling Cereals and Pulses, and the representatives of the associated Producer Groups (PGs) will need to be trained on price risk management. This training can encompass price analysis; systems and procedures to aggregate produce, access financing, and trade as a group; and, benefits and risks in warehouse receipt financing and e-trading.

E-Trading: The concept of E-trading or 'Virtual Market' is innovative and experimental. Virtual Markets for agricultural products are very much in their infancy but with new technological development, field results are undergoing significant revision and refinement. Various states have amended the APMC Act on the lines of the Model Act and the Rules under the Act provides for e-trading. States have already granted licenses to MCX and NCDEX for carrying out e-trading activity. The e-trading system would enable producers, user organizations, electronic traders and existing traders to be able to offer product to the market and that a system would be in place that would enable buyers and sellers to broadcast buying needs and product requirements to one another. Under an electronic trading platform, there are possibilities for secured buying processes to be put in place and it is envisaged that traders would subscribe to the service and the cess income would cover the private management costs as well as provide an income stream for the State Government.

Direct marketing: Farmers' Markets were introduced with a view to eliminate the middlemen and arrange facilities for the farmers to sell their produce directly to the consumers at reasonable rates fixed every day. On account of the scheme, both the farmers and the consumers are benefited. Some examples of these channels are *Apni Mandi*, *Rythu Bazars*, and *Uzhavar Sandies*. These channels are mostly adopted in sales transactions of agricultural commodities like fruits, vegetables and flowers which are highly perishable. In this channel, the produce move quickly from farmers to consumers due to absence of middlemen. If

farmers directly sell their produce to the consumers, it not only saves losses but also increases farmers' share in the price paid by the consumer. There is need to promote more of *Rythu Bazaars / Kisan Bazaars* which allows farmers to directly sell their produce to consumers without intermediaries. Direct marketing by farmers is being encouraged as an innovative channel.

Supply / Value Chains: The fragmented marketing system and lack of infrastructure are the serious constraints and are acting as challenges against competitiveness for our commodities. In a globalised trade regime, it is essential to link the farmers with the markets with state-of-art infrastructure. This effective linkage can alone remove the constraints of logistics, quality maintenance and thus, compete with global products. Analysis of international market development scenario reveals that encouraging large scale integrated players to develop the supply chains in various commodities with latest technology infrastructure is the right approach suitable for Indian conditions. The existing system of fragmented handling of various supply chains should be converted into integrated handling systems with state-of-art infrastructure so as to ensure better realization to the farmers. Contract farming and supermarket procurement arrangements are two supply chain arrangements that are gaining ground amid active debate in India. Recent experience in India indicates that contract farming and supermarket procurement approaches will have to involve small-scale farmers in the medium term, because the farm structure obliges them to do so.

Approaches to promote equitable participation by large- and small-scale farmers include:

- a) Facilitating entry and competition among buyers (for example, improving the rural infrastructure or establishing collection centers to reduce the transaction costs involved in sourcing from small scale farmers);
- b) Organizing farmers into formal or informal groups to meet the volume requirements and strengthen farmers' bargaining power;
- c) Enhancing farmers' capacity to adopt improved production and post-harvest techniques to meet the required higher quality standards;

- d) Assisting farmers to obtain the capital to make on-farm improvements and other required investments (for example, in irrigation, greenhouse, grading, or cooling facilities) and acquire essential national and international certifications;
- e) Training farmers and buyers about their rights and obligations under contract farming arrangement and in the design of contracts; and
- f) Developing institutions that assist farmers to settle contract disputes (such as commodity or market associations).

In some countries, public-private partnerships have been instrumental to the success of new supply chain arrangements (for example, in providing extension and technical assistance to improve the quality and safety of produce and accreditation of farmers). A convergence platform at National, State and District level where private players join hands with large number of farmers through various ongoing schemes and programmes of Central and State Governments in a PPP mode may be a good beginning during 12th Five Year Plan.

Recommendations for the XII plan:

1. **Producer Organizations:** Producers organizations (PO) could be the best alternative for enabling farmers / producers to get better remuneration for their produce because it enables aggregation of the produce and in turn gives the necessary bargaining power to get better price. To strengthen the Producer Organizations and to make them play an effective role in alternate marketing the following areas need attention: Credit availability, Capacity Building, Alternatives to Equity, Venture Capital Fund, State Support to Producer Companies (PCs), and Convergence of various schemes to PO.
2. **Linkage with Retailers / Processors / Exporters :** Linking directly producers with Retailers / processors / Exporters is another alternative marketing system which is cost efficient, technology friendly and enables quality improvement. Well designed interventions for the same are needed.

3. **Price discovery:** Market Intelligence and market information services would be a critical aspect in future. State interventions through a platform of virtual market could be one such instrument.

4. **Direct marketing:** Promote more of *Rythu Bazaars / Kisan Bazaars* which allows farmers to directly sell their produce to consumers without intermediaries, as it not only saves losses but also increases farmers' share in the price paid by the consumer.

Keys to inclusion of smallholder farmers in dynamic markets



5. **Organized retailing:** To be promoted by removing all restrictions on FDI for creating good competition for domestic players and to bring new technologies and management practices provided commodities are procured only from Producers Organizations.

6. **Market Access for small producers:** The market access depends on: (a) understanding the markets, (b) organizing of the firm or operations, (c) the existence of communication and transport links, and, (d) an appropriate policy environment. Understanding the markets in a modern context involves understanding the value chains and networks and their dynamics from a small producer perspective. Interventions like Farmer Common Service Centers could be an appropriate forum for such a market access.

7. **Reforms for efficient traditional markets:** The functioning of traditional markets (APMCs) needs to be improved to enhance their cost efficiency so that producers and consumers can realise better prices. The amended APMC Act allows for the setting up of private markets. It is also necessary to enforce an open auction system, improve buyer competition in markets, provide better facilities such as cold storage, and improve farmers' access to market information. These markets are important to small farmers and even a significant proportion of medium and large farmers, who still depend on them; they also serve as main competitors to contract farming and can improve the terms offered to contract growers.

8. **Integrated Value Chain Promotion:** There is a need to combine value chain promotion with livelihood perspective to enable the resource poor to enter in to and stay in to globalized commercial markets. Innovation in smallholder market linkage are needed in terms of partnership, use of information and communication technologies, leveraging networks, value chain financing, smallholder policy, and, even in contracts that can promote both efficiency and inclusiveness of the linkage.

9. **Promotion of Innovative Marketing Models:** Choosing the right market and a market development strategy is essential to scale up the operations that can come only by innovation of products and business models. It is not market access but effective market participation that is at the heart of success of any market linkage for primary producers.

10. **PPP for efficiency and effectiveness:** Partnership with the private sector can come in handy as they can provide technology, and upgrade business (quality) and social standards. For this, POs and their staff and farmers should be more market-oriented and have the capacity to work with and negotiate fair contracts with private agencies. This requires training of PO personnel and farmers in modern markets and their dynamics which includes contract negotiation, business management, market research, supply or value chain analysis, basic business documentation and crop and farm plans and budgets. Farmers also need to be made aware of the need to respect contracts and specific terms and conditions including prices, rejections and penalties for default.

Private sector agencies also need to invest in linkage building. Contracting agencies may provide inputs on credit to their contract growers in India as cost of production and transaction for high value crops is generally higher and difficult for growers to provide for from their own resources and networks. Convergence with various ongoing programmes for backward linkages provided to a private player taking care of forward linkages could be the desired model for PPP.

CHAPTER 4

Innovations and Institutional Support

Background

Globalization is changing the way agricultural marketing is organized, even within relatively sheltered produce markets such as India. National, regional and local marketing systems are increasingly adopting global best practices in procurement, storage, transport, packing and processing of food products. Food supermarkets are a reality and even if their present market share is tiny, they are likely to become major players in the coming decades to cater to the growing urban demand for quality farm produce delivered in modern formats. This in turn will create pressure for higher food quality standards and usher in new procurement systems. Efforts to unlock the tight hold of the APMC inspired *mandi* system over agricultural marketing marketing will intensify in the near future, leading to the entry of new players bringing cutting edge technology and modern supply chain processes. Indian companies are also increasingly likely to attempt to capture larger market shares of the expanding international trade in primary commodities and processed foods and hence seek quality produce in large volumes from domestic producers.

More urgently, the proposed national legislation to create the right to a minimum quantity of food for the majority of the population will bring increased pressure on agricultural marketing markets and demand innovative solutions to feed the public distribution system (PDS). Can this be an opportunity to leverage greater growth in a sector which has recently shown fresh signs of hope as an engine of rural prosperity? What are the necessary conditions to converge the twin objectives of food security and broad based agricultural growth?

At the same time we have a production base characterized by millions of small producers who are finding it increasingly difficult to manage the high risk of farming, growing weather uncertainties, unreliable input supplies, stressed infrastructure in the power and irrigation sectors and antiquated marketing arrangements. The trends outlined in the preceding paragraph will further weaken the bargaining power of the vast majority of these producers and it is unlikely, given present conditions, that they will benefit from opportunities at the national

or international level in any meaningful way. If anything, their situation is likely to worsen without the urgent adoption of new and innovative institutional solutions.

The largely supply-driven official agricultural growth strategies are unable to target vast sections of the peasantry, and rainfed regions in particular continue to witness both the volatility and distress associated with the vagaries of nature, as well as imperfections in factor and commodity markets. Producers in these regions already suffer from a serious technological and productivity gap compared to better endowed areas. Their condition is likely to deteriorate further and their isolation from the new emerging markets is almost a foregone conclusion. Hence the urgent need for solutions that mark a break from the past and significantly improve the terms of smallholder access to the market.

Smallholder agriculture: current constraints

The constraints faced by small producers may be summed up as follows:

1. Shrinking land asset, rising per unit investment costs and reduced profit margins owing to lack of technological breakthrough for major crops.
2. Difficulties in accessing critical inputs for agriculture, especially credit, water, power as well as quality seeds, fertilizers and pesticides and appropriate and timely technical assistance.
3. Episodic, expensive and unreliable access to technology, especially mechanization.
4. Fragmented value chain in agricultural marketing, monopoly and/or monopsony conditions; few opportunities for value addition at the bottom of the chain.
5. Weak bargaining power with market agents and low returns on investment.
6. Lack of easy access to risk/seed capital for agricultural enterprises.
7. Hazy legal situation regarding tenancy/leasing of land.
8. Lack of clarity on regulatory framework for contract farming.

Even as the above are stark realities, there is a market context in which smallholders survive and continue to seek better leverage in the market. The major features of the present market scenario in agriculture may be summarized as follows:

1. Globalization, an expanding domestic middle class and diversification of the food basket are driving growing corporate interest in agriculture as a source for raw material for agri value chains. The globalization of the economy in general and particularly the agricultural sector is working in two directions – ever increasing importance of exports of agricultural products and the growing competition of food imports on the domestic market. There are numerous examples of backward linkages between the corporate sector and farmers which suggest that direct producer-retailer relationships have developed in almost all parts of the country. The market has finally arrived at the farmgate; the question is: whose farmgate?
2. The majority of existing examples of tie-ups between farmers and processors/retailers involve medium and large farmers, with very few instances of small and marginal farmers successfully linking up with corporate players.
3. The highly fragmented nature of production and low per capita surplus of small and marginal farmers limits their ability to access the market to leverage better returns for their produce.
4. Corporate and other bulk buyers of agri commodities find the transaction costs of dealing with a large number of small producers prohibitively high and prefer dealing with bigger farmers and *mandi* aggregators.
5. Contract farming has not benefitted small producers in a meaningful way, as information asymmetry, weak bargaining power and legal ambiguities create insurmountable hurdles to producer-buyer relationships. However, there is growing evidence that contract farming arrangements are expanding across the country and will ultimately seek out small producers.
6. Access to timely and affordable credit, effective extension services and availability of adequate inputs remain out of the reach of the majority of small producers, restricting the exploitation of the full potential of their natural resource base, even where these endowments are satisfactory.
7. Current examples of institutional aggregation of small producers, whether informal collectives or formal cooperatives and producer companies, are scattered and few in number. They face a variety of constraints, including an unfriendly regulatory and legal environment, lack of opportunity to

- access capital and credit and are unable to scale up to a size significant enough to deal with market forces on favourable terms.
8. Unrecorded tenancies are mostly held by small and marginal farmers and tribals, with attendant disadvantages, such as lack of access to institutional credit and subsidized inputs, inability to benefit from new market instruments like warehouse receipts and insecure tenurial conditions. All these drawbacks are doubly magnified in the case of women holding informal tenancies. At the same time, it is observed that absentee landlordism is an acute problem in some regions (especially the hill states and rainfed areas), resulting in huge tracts of cultivable fallows lying idle.
 9. Present arrangements for risk mitigation, especially crop insurance instruments, are highly unsatisfactory and do not adequately cover the risks faced by small producers. The marketing and assessment mechanisms for crop insurance are skewed in favour of the insurance companies, leaving small producers especially vulnerable to the vagaries of weather and market alike. This holds back small and marginal farmers from shifting to higher risk commercial crops, which would otherwise bring better returns.
 10. Finally, it is noteworthy that there is no special targeting or earmarking of resources for small and marginal farmers in centrally sponsored agricultural development programmes during the XI Plan. This raises unanswered questions about the equity impact of such interventions.

Proposed interventions in the XII Plan

It is clear from the available data and market behavior that small producers, especially if they happen to be women, dalits, tribals and landless labour, dalits and tribals, are among the most disadvantaged in the current economic scenario. However, it also a fact that the present trends offer a tremendous opportunity to link small and disadvantaged producer groups to market opportunities to enhance incomes and return on labour and investments. The missing elements of support, information asymmetry and the most critical issue of finance are among the key factors that seem to

determine the terms on which small producers relate to the market. The broad strategy that the XII Plan should follow in respect of extending help to smallholder agriculture and disadvantaged producer groups must expressly address these gaps and base itself on the following principles:

- (i) It must aim to improve the terms of trade of small producers with the market
- (ii) It must address risks faced by small producers and help to reduce them
- (iii) It must recognize the importance of small producers in the value chain and facilitate their inclusion in the wider economy
- (iv) It must target the moving small producers further up the value chain to increase their returns on investment and their economic security.

In the following paragraphs we suggest some specific strategies to be adopted in the XII Plan period that could help to achieve the above goals.

1. Institution building for small producers: supporting farmer producer organisations (FPOs)

Member based FPOs offer a proven new pathway to successfully deal with a range of challenges that confront small producers, empowering their members in a variety of ways. Overcoming the constraints imposed by the small size of their individual farms, FPO members are able to leverage collective strength and bargaining power to access financial and non-financial inputs and services and appropriate technologies, reduce transaction costs, tap high value markets and enter into partnerships with private entities on more equitable terms. With fragmentation of holdings a continuing phenomenon, FPOs offer a form of aggregation which leaves land titles with individual producers and uses the strength of collective planning for production, procurement and marketing to add value to members' produce. International and limited national experience in the performance of FPOs gives rise to fresh hope and make a strong case for supporting member based farmer bodies to significantly increase their power in the market place and reduce risks.

FPOs can provide essential goods and services to the rural poor, besides their own members, and **contribute significantly to the process of rural**

poverty alleviation. They are seen as an important risk mitigation device to overcome the constraints faced by farmers, especially small producers seeking to benefit from growing market opportunities in developing nations. One FAO (2007) estimate placed the value of agricultural produce generated by existing FPOs (largely cooperatives) in India and China in 1994 at US \$ 9 billion each. They have been found to positively impact research priorities through participation and closer feedback to scientists, besides providing valuable inputs to policy formulation by channeling the opinions of the farming community. The role of FPOs in reducing costs of financial intermediation for formal financial institutions and more effective targeting of small producers for financial services has also been favourably noted.

The XII Plan should mandate an institutional development component in all Centrally Sponsored Schemes, specifically targeting FPO formation among small producers, especially tribals, dalits and women. Ideally, this component should be at least 20% of the total outlay of the scheme. Assistance for this component should be spread over at least 5 years, which is the ideal period for an FPO to mature. Costing norms can be adopted from NABARD's farmer club scheme (which provides Rs. 3000.00 per member per year for a period of three years). Civil society and private sector organisations, besides other resource institutions like agriculture universities, Krishi Vigyan Kendras, ATMA, banks, cooperatives and other similar bodies can be identified for promoting and hand-holding FPOs. This window could also be used to provide support to existing FPOs for capacity building, managerial inputs, marketing etc.

The majority of FPOs that are likely to emerge as a result of this intervention will remain focused on addressing issues of crop planning, technology infusion, input supply and primary marketing. However, at least one fourth to a third could seek to leverage their presence further up the value chain, entering into direct retailing, value addition, storage and processing and engage in contract production of primary and processed agricultural produce. There will be a need to support the business development needs, both financial and non-financial, of such FPOs, mostly at the lower end of the value chain (e.g. setting up pack houses, grading centres, milk chilling plants, small cold stores, drying or quick freezing plants). There should be a window to access a **Business Development Fund (BDF)** by FPOs, should they decide to enter the value chain. The BDF can

be conveniently created in the Small Farmers' Agribusiness Consortium (SFAC) alongside its existing Venture Capital Fund. This should be available as a one-time grant to any FPO which seeks support to understand the requirements of a sub-sector, preparation of (DPR (DETAILED PROJECT REPORT)), documentation, consultancy services as well a one-time seed capital infusion, paid as a proportion of the equity raised by the FPO members.

2. Venture Capital, Governance and Marketing Assistance to small farm enterprises

A Venture Capital Assistance Scheme was launched through SFAC late in the X Plan and continued in the XI Plan. The main lessons from the scheme's performance in respect of small producers are as follows:

- i) The minimum investment size of VCA projects has been pegged at Rs. 50.00 lakh, putting it beyond the capacity of individual small producers or even their collectives to qualify.
- ii) Almost the entire list of beneficiaries of the VCA during the XI Plan consists of private entrepreneurs and companies.
- iii) Benefits to small producers are mostly indirect, primarily as a source of raw material supply, with little or no sharing further up the value chain.
- iv) Most recipients of the VCA have noted the importance of organizing FPOs to making heir subsectors more competitive.
- v) Since the scheme was implemented only through public sector banks, it failed to leverage potential investment opportunities offered by cooperative and regional rural banks, besides private scheduled banks and specialized finance institutions, such as the National Cooperative Development Corporation (NCDC), Northeastern Development Finance Corporation (NEDFi) as well State Finance Corporations.

These lessons should be incorporated in a reformed and expanded version of the VCA scheme during the XII Plan. Key among the changes should be:

1. The minimum threshold size for individual projects should be reduced to Rs. 10.00 lakh (Rs. 5.00 lakh in north eastern and hill states), to encourage projects promoted by FPOs (these could be any form of producer collective, from cooperatives, associations/societies, producer

- companies or even self help group federations), producer groups, cooperatives, SHG federations and of course private entrepreneurs.
2. The list of partner financial institutions should be widened as far as possible to include all bodies that are notified by RBI as financial institutions (this would include all the FIs listed in iv] above and even attract NBFCs licensed by RBI).
 3. The necessity of leveraging bank finance with the VCA should be done away with, instead offering pure equity support in case the enterprise is being launched by producer collectives.

For the larger agenda of promoting agribusiness enterprises by producers, the following ideas could be tried:

i) Facilitating SMF (Small and Marginal Farmers) Competitive Business:

Certain commodities (like milk, sugar) and verticals like seed have inherent advantages for SMF participation. Seed sector is particularly amenable for creating SMF businesses - the large presence of state sector – state corporations, NSC and government being a large market; suitable policy measures can create trade terms in favour of SMF Collectives. SRR (seed replacement rate) in the last decade has been rapidly increasing in agriculturally under-developed states, rapidly creating a new market which can be serviced by local seed farmer-producer companies. The BDF proposed to be set up in SFAC can perform the role of identification, incubation and seeding of these ideas.

ii) Support to Mitigate Management & Governance Deficits : At the level of

SFAC and similar apex structures, programs supporting managerial staff to undergo training, access to IT based enterprise management systems can be thought of. Emulating business corporations, producer businesses beyond a certain level of turnover, can be mandated to have Independent Directors and other business and statutory advisory support. CII has a program to provide mentoring support to new entrepreneurs; a similar mentoring program can be conceived for producer businesses with corporate tie-ups. Some corporates are also looking to provide their middle management with such opportunities.

- iii) Access to capital remains a big challenge due to inadequate initial capitalization.

Facilitative instruments like FLDG (First Level Default Guarantee, a sort of risk cover), loan guarantees etc. can be supported. Here again, using existing mechanisms like SFAC makes most sense.

- iv) Setting up Trade Facilitation Centre/Hub - Enabling Processors/Retailers to Procure directly from small producers: Tax breaks already exist for setting plants in backward areas; these can be further tweaked to provide specific incentives for procurement from small-marginal farmers. A strongly anchored single-window, decentralized match-making, facilitative agency is required to assist potential investors/processors to negotiate licensing and pre-operative clearances. Transparent rules & procedures (inventory of guidelines at one place) and assistance in contracting procedures etc. can greatly accelerate participation of organized/formal market players to source produce.
- v) Mandating “priority procurement” from small-farmers : Market players see a big profit_opportunity in the burgeoning Indian market, as trade in agri commodities is liberalized and even FDI in retail seems to be a near certainty. Creating a condition for compulsory procurement of 20% from SMF would not be difficult to trade off for entry into the lucrative Indian market. The experience of “priority sector lending” is worthwhile as it was applied to new private banks effectively. It also led to a lot of product innovation.
- vi) Creating a consumer connect through branding and certification of “Small

Farm

Produce”: The most assured sourcing pull is if consumers start associating beneficial (product or societal) attributes to small-farm produce. We feel that there exists a latent consumer demand that a certification trademark can unlock. Beneficial product attributes are discernable in table fruits, vegetables and spices, where timely picking and crop husbandry are critical variables. As the economy expands, the increasing rural-urban income disparity has created a growing segment of consumers who are interested in patronizing rural/small-farm produce; success of *Dilli Haat*, *Fab India* etc. prove this point. The key is in investing in the “Small Farm

Produce” brand through grant funding at the outset and then allowing easy licensing to any producer/retailer who commits to promoting it.

3. Building Farmer-Private Enterprise Partnerships: new institutional innovations

The traditional producer vehicle to facilitate collective action for markets has been the cooperative or more recently, organizational forms like federations or Producer Companies. The track record of these organisations as sustainable, independent enterprises is limited, so while we continue to support the emergence of these organisations, new institutional innovations are required in search of sustained market access for farmers. Dynamic new markets, far-reaching technological and institutional innovations, rising aspiration of farming families, characterize the fast changing agricultural landscape. The emerging new agriculture is led by new breed of private entrepreneurs (unlike the traditional merchant capital with short-term view) in extensive value chains, linking producers to consumers. The new private sector is attempting to bring the market to smallholders. There is space in this process for meaningful arrangements of private enterprises teaming-up in the supply chain with producer collectives (formal or otherwise) and develop sustainable business models, not using primary producers only a source of raw material, but rather as business partners with sharing of profits. Here are some of the ways this might happen:

1. Lead Farmer Model : Lead farmers within the SMF community can be an aggregating node for information and output linkages with upstream enterprises. Traditionally, in the handloom sector, master-weavers have intermediated between the market and individual weavers. In the case of farm produce, these have usually been exploitative, like the *dudhiya* or local money-lender cum trader. However, recent efforts like ITC’s e-choupals (Sanchalak), IDEI’s IPMAS (Nursery Entrepreneur); PRADAN’s Agriculture Production Clusters (Community Service Provider) have shown that it is possible to create aggregation points within the SMF cluster on more transparent and equitable terms. Typically private enterprise develops and promotes a ‘lead farmer’ model of organization, through which they identify and build the capacity of farmers who can meet their quality and volume needs in a consistent fashion. After demonstrating such capacity,

lead farmers receive ever larger orders for produce and are invited to work with neighboring farmers to meet this demand. The lead farmer provides access to technology, technical assistance and market access as embedded services. The cost of these services is then recouped via the sales margin. The expansion of this model is organic and depends on the identification of new lead farmers. It is low-cost, easily scalable and sustainable. Indonesia has seen large scale tie-ups between vegetable growers and supermarkets based on the “Lead Farmer” model. This can be one variation of the several possible to encourage contract farming on a large scale. In the view of this group, far more important than a facilitative legal framework is access to affordable and timely credit for contract growers. This can be linked to voluntary collectives of farmers emerging and tapping a softer line of credit, provided that there is a firm contract in hand. The mechanism can work on the lines of a LC (letter of credit) commonly used by exporters to raise short term capital from banks against firm orders.

2.Producer Companies co-capitalised by Private Venture Funds : The last decade has seen the emergence of a large number of social/ethical investors interested in supporting producer businesses with modest returns. These investors bring a host of linkages, management skills and ensure governance structure functions to demand performance and hold managements accountable. Zameen, producing pesticide-free and fair trade certified cotton fibre, services 6000 farmers at present. Agriculture and Organic Farming Group (AOFG) holds 43% of the shares (funded through two Dutch donors), Aavishkaar 33% (a private social venture fund) and the farmer's organizations 7%. Zameen's earnings from cotton sales are used to buy the shares from AOFG and Aavishkaar. Minor changes in the existing Producer Company legislation can enable private capital (with restrictions) participation; this would in a small way reduce management and governance deficits.

3. Co-create Value Chain through Joint Stakes Company: Assured markets are a big pull for SMF to collectivise and aggregate their produce. This has been the weakest link whenever SMF collectives have attempted to enter the market. The strength of the SMF is her mastery over the production system – as efficient producers of quality goods, partnership with private enterprise can unlock this

potential at farm end. Community Companies of Fab India is one such example where Fab India as an upstream enterprise has helped organize individual artisans in their own companies by assuring market for their produce and also placing its stake. Eco Tasar Private Ltd., with equity stake of private entrepreneurs and MASUTA producer company, is another such example. MASUTA's yarn producers are relatively assured that the entrepreneur will not back out. Farmers as shareholders is not a concept for promoting ownership, but is based on improving supplier-buyer coordination. It is about changing the relationship between farmers and enterprises into one that is more balanced – i.e. based on a “relationship between equals.” From the perspective of companies, having farmers as shareholder makes sense - secure supplies (as shareholders will prefer sell to their “own” company rather than ‘side-selling’ to a competitor), could create consumer connect and enhance brand value. Shareholding for farmers ensures financial benefits in the form of market access and secured sales; dividend income, appreciation in value of capital investments, improved access to business information and decisions. Shareholding as financial assets would also enable better access to bank credit.

There are a few successful international examples of financing farmers' shareholding – DFID's bank guarantee to producers to buy share in Divine Chocolate; in the case of Nshili Tea Corporation, African Development Bank and IFAD created a Trust fund to finance farmers to buy shares. A mechanism can be created with budgetary support to SFAC for placing matching funds in “co-created” businesses with producers.

4. Creation of ‘Agricultural Risk Fund for Small and Marginal Farmers’

Even with the most well coordinated efforts to link small and marginal producers to investments and markets, a wide variety of risks will continue to bedevil these categories of farmers. Climate change, pressure on arable land for competing uses, infrastructure bottlenecks and market risks will cause both short and medium volatility, adversely impacting small producers. The Agricultural Risk Fund (ARF) is envisaged as a permanent corpus which comes to the rescue of small producers in emergencies beyond their control, by primarily underwriting

some key service institutions and activities. E.g. financial institutions of all hues (banks, NBFCs, cooperatives, SHG federations) can be encouraged to purchase the cover of the ARF at a nominal fee (which can be as low as 1-2% of the amount advanced to each borrower) and receive a first-level-default-guarantee (FLDG) of 8%-10%. Premium rates could be adjusted for lower or higher FLDG cover. Similarly, agricultural insurance product vendors could approach the ARF for a similar FLDG. It is also possible to work out arrangements to use such a mechanism to evacuate high value produce from the north eastern and hill states, covering both transport and handling losses. In fact, the ARF could spur tremendous innovation in services to small producers with the umbrella that it offers.

At the same time, the ARF can become the guarantor of last resort to promote farm enterprises developed by small producers. One of the key constraints in launching these enterprises, as we have noted above, is the absence of sufficient margin money and equity on the part of small producers to leverage term loans from banks. ARF can offer viability gap funding for a period of one or two years to enterprises owned by small producers by charging a small fee similar to the FLDG arrangement. This would go a long way in covering start-up and initial marketing risks and spawn hundreds of farm enterprises promoted by small producers themselves (including FPOs, self help group federations, cooperatives etc.). By incentivizing them to move a few rungs up the value chain spiral, the ARF would contribute significantly in mitigating risks in agriculture.

Suitable modalities for the independent and professional functioning of the ARF (along the lines of the USO Fund for the telecom sector which supports rural telephony infrastructure) can be developed once the idea is accepted in principle. NABARD and SFAC can be mandated to act as the outreach arm of the ARF, actively building awareness of its provisions, identifying potential projects, appraising, disbursing and performing other services on behalf of the ARF.

5. Land leasing options: a Public Land Bank

Recognizing the reality of informal tenancies across the country, the overwhelming majority of which are held by small producers, including women, the landless and tribals, an urgent solution to this challenge is necessary.

However, it is also a reality that land is a State subject and there is no legal remedy to the problem at the national level. The fear among title holders (and many of the lessors are themselves small and marginal farmers) of losing possession and even title is widespread and real. Enacting a law to recognise tenancies would actually freeze the informal land lease market in the short run and may even result in forcible evictions of existing tenants. What we propose is an economic incentive to nudge States to act in favour of small and marginal landholders, landless labour, women, dalits and tribals. This can be achieved even as the concerns of landowners are addressed, besides bringing under cultivation huge tracts of fallow land held by absentee landlords who have migrated to urban areas.

The solution we propose is the creation of a Public Land Bank (PLB), with initial seed capital provided by the Govt. of India and the State Government in an 80:20 ratio. The PLB will be registered as a Society (on the lines of the central and state SFACs) and function directly under the control of the State Governments.

The primary function of the PLB would be to “take deposits” of land parcels from landowners and lease out the same for a period of between three to five years to small and marginal farmers, their collectives and other specially designated categories (including women cultivators, dalits, the landless and tribals). Obviously, leasing to corporates, large farmers and other prohibited categories (which will be specified at the time of the PLB’s creation) is completely ruled out. But why would State Governments set up the PLB and why would landowners want to offer their land to its pool?

Here the role of the economic incentive kicks in. Besides the initial seed capital contribution, Govt. of India should also offer a per hectare incentive (which can be scaled along with land size, category of holder and type) to encourage landowners to “deposit” their land in the PLB. The incentive can be structured along the lines of the interest subvention which the Central Government currently offers to financial institutions that offer short term crop credit to cultivators at reduced rates. It is possible to leverage this per hectare incentive in such a way that the bulk of it is passed on to the landowner as a topping up on the rent which he receives from the PLB. A small portion of the incentive could be retained by the PLB to cover its operating expense so that it is not tempted to raise its

transaction fees. The incentive can be capped at a maximum of 10 hectares in the case of collectives and 5 hectares in the case of individual lessees. The incentive can also be linked to the duration of the lease, with a five year lease earning a higher payout compared to a three year one. This provides a balanced set of options to both lessors and lessees.

The key feature of the PLB would be its ability to provide composite land parcels from its land bank to small producers and FPOs for a fixed period, while at the same time ensuring a rent to the owners and return of the land parcel at the end of the agreed period of lease. The landowner is assured of the protection of his/her title and of repossessing the land at the end of the period of “deposit”. The lessees benefit by dealing with a public authority, paying reasonable rent or profit sharing (as may be agreed at the time of the “deposit”). Most importantly, the legal lease (which would be recognised as a negotiable instrument) entitles the lessees to institutional finance, completely changing the economics of their production cycle. Interventions such as mechanization and application of modern technologies, besides sourcing quality inputs and managerial support all become feasible when directed a reasonable plot size with shared costs. Market aggregators too will be attracted to these producers and contract production arrangements have a greater likelihood of spreading in this scenario.

A pilot on the above lines should be launched early in the XII Plan in collaboration with a few State Governments and its results studied and followed up on a country-wide basis.

CHAPTER 5

Improving Efficiency & Reducing Transaction Costs

5.1 Physical Markets

Introduction:

Indian agriculture is at cross roads where the sector has to work towards food security as well to meet inevitable global competition brought by advent of multi brand retail. Agriculture sector needs streamlined supply chain in the form of well functioning marketing infrastructure to make “Farm to Fork” Model a reality. However, In India, the high value supply chain is complex and the infrastructure connecting the various partners in the chain is very weak. Each stake holder: farmers, wholesalers, food manufacturers, retailers all work in silos. The studies conducted by Directorate of Marketing and Inspection (DMI) reveal that Costs and Margins account for 30 to 35 per cent of consumer’s price in foodgrains, 45 to 55 per cent in fruit and vegetables and 12 to 36 per cent in oilseed crops. In order to provide dynamism and efficiency into the marketing system, large investments are required for the development of markets, post harvest and cold chain infrastructure. The current paper focuses on Physical Market Infrastructure highlighting status, gaps and recommendations for strengthening Physical Market Infrastructure for XII Five Year Plan.

Overview and status of Physical Market

Status of Regulated Markets

Agriculture/agricultural marketing being a state subject, it is the responsibility of respective state governments to take necessary steps for reforming marketing infrastructure. At present farm output is traded through a network of 27738 wholesale and primary rural markets and 7157 regulated markets scattered across the states¹. Out of the 21,221 rural periodical markets, 15% function under the ambit of regulation. The advent of regulated markets has helped in mitigating the market handicaps of

producers-sellers at the wholesale assembling level. But, the Rural Periodic Markets in general, and the Tribal Markets in particular, remained out of its developmental ambit.

Two main legislative instruments with the central and state governments, viz, the Agricultural Produce Marketing (Regulation) Act and Essential Commodities Act, 1955 respectively are used to monitor the activities of market functionaries and provide a platform for orderly marketing of agriculture commodity. The institution of regulated market has, however, achieved a limited success. Over a period of time regulated markets have acquired the status of restrictive situation in favour of traders, who by virtue of having APMC license are enjoying monopoly and distorting the agricultural trade. As a result the farmer does not get fair price as well as truthful remittance of actual sale proceeds on one hand and consumers pay disproportionately high price on the other.

Status of Rural Primary Markets (RPMs)

Rural Primary Markets include mainly the periodical markets known as haats, shandies, painths and fairs which are estimated to more than 21,000 to a maximum of 47,000 in the country. These are located in rural and interior areas and serve as focal points to a great majority of the farmers – mostly small and marginal for marketing their farm produce and for purchase of their consumption needs. It is estimated that 90 per cent of the total marketable surplus in the remote areas is sold through these markets. Improving efficiency of this grass root level market outlets will facilitate proper price formation, minimize costs and pave way for introduction of innovations. Number of studies has shown that the efficiency of rural markets is poor due to high degree of congestion at market yards, less number of traders and non-availability of supporting facilities and services. The efficiency of rural assembly markets, as a link in the marketing chain have positive impact on types of crops to be grown and resource allocation by agricultural producers. There is a need to develop these markets on priority so that the marketing efficiency is increased and farmers get remunerative prices of their produce.

¹ DMI

Majority of Rural Primary Markets are owned and managed by the private individuals, Panchayats and municipalities who are interested in collection of ground rent/fee/cess, etc. and no fund are diverted for the development of infrastructure in these markets. Since the nature and conduct of markets are changing, there is a need to bring professional management of these markets for their efficient functioning through development of infrastructural facilities. The capacity building of marketing personnel is urgently needed to administer these markets properly.

Specialized Commodities Markets

The majority of standalone wholesale markets handling mix of commodities are operating in the country. The agricultural commodities require specific infrastructure depending upon their perishability, volume to be handled and requirement of type of storage/cool chain facilities, etc. The infrastructure facilities available in these markets at present are far from satisfactory. Keeping in view the specific needs of the perishable commodities, there is need for developing specialized markets for fruit and vegetables, flowers, medicinal and aromatic, plants, spices, livestock and its products, fisheries, etc. The Task force on Development of Cold Chain Development has recommended investment of Rs.8150 crores for different infrastructures to be created to protect the wastages of perishable commodities in food supply chain. There is an urgent need to develop specialized markets with need based infrastructures to enhance the marketing efficiency and ensure remunerative returns to the producer-sellers.

Terminal Market Complex (TMC)

The scheme of Terminal Markets Complex (TMC) has also been conceptualized and introduced as a new item under NHM, which is proposed to be implemented in a Public Private Partnership (PPP) mode by establishing the Hub (Main Market) and Spokes (Collection Centers) of the Terminal Markets by the successful private enterprise. There is a provision of equity participation by producers Association upto 26% of the total equity in the TMC. This Scheme is reform linked and would be implemented in those States who have amended their APMC Act. Approval has already been accorded for establishment of TMC at Patna (Bihar) and Perundurai (Tamil Nadu) and in-principle approval has been

accorded for bidding for TMC at Babangaon (Maharashtra), Nagpur(Maharashtra), Madurai(Tamil Nadu), Kancheepuram (Tamil Nadu) and Sambalpur (Odisha). TMC in other States needs to be developed under PPP mode

Alternate/Innovative Markets

The innovative scheme “**Uzhavar Sandhai**” was introduced by the State Government of Tamil Nadu in 1999-2000 for direct selling of fruits and vegetables by farmers to consumers at a fair price without any intermediaries. At present 164 Uzhavar Sandhais are functioning in the state. In these markets, daily price for the produce have been fixed by the team of officials including agricultural officer and representative of farmers groups. The rate fixed is about 20% more than prevailing wholesale market price and consumers are benefited by getting about 15% less than prevailing retail price. No market fee is levied for transactions in Uzhavar Sandhai.

Rythu bazaars in Andhra Pradesh have been established in the state of Andhra Pradesh in year 1999 with prime objective to provide direct link between farmers and consumers in the marketing of fruits, vegetables and essential food items. There are presently 106 numbers of Rythu Bazaars in the State. Both producers and consumers are benefited from Rythu bazaars as producer's share in consumer's rupee is more by 15 to 40 per cent as compared to other markets and consumers get fresh vegetables, fruits and food items at 25-30 per cent less prices than the prevailing prices in nearby markets. Further, marketing costs are at minimum level as middlemen are completely eliminated from marketing activities in Rythu bazaars. Market fee is exempted for the transactions in Rythu Bazaars.

In **Apni Mandi** in Punjab, there is a direct contact between the farmers and ultimate consumers for sale of the produce. These mandies are called apni mandi, as farmer-producers bring the produce for sale directly to the buyers or consumers. Apni mandi system does away with the middlemen. The Agricultural Produce Market Committee of the area where Apni mandi is located provides all necessary facilities like space, water, shade, counters and balances.

Krushak Baazars have been established by State Government of Odisha and are managed by APMCs. Farmers generally trade paddy, maize and cotton and

fruits and vegetables. There are no commission agents/traders operating in these markets. Such markets need to be promoted for the benefit of farmers and consumers by facilitating direct marketing.

Contract Farming

Farming under contracts, which confer benefits to both producer and purchasers, for ensuring assured and remunerative marketing opportunities to the farmers by way of assured procurement of the produce of desired quality by the contract farming sponsor from the contract farming producer at a pre determined price at a future date is called contract farming. The contract-farming sponsor may also provide input and technology support to the contract-farming producer including the extension support for desired quality and specification/standards of agricultural produce. The Model APMC Act 2003 stipulates institutional arrangement for registration of sponsoring companies, recording of Contract Farming Agreement, indemnity for securing farmers' land and lays down a time bound dispute resolution mechanism. Contract farming has been prevalent in various parts of the country for commercial crops like sugarcane, cotton, tea and coffee, etc. There is a need to promote Contract Farming in high value crops with single registration at State level.

Status of Unregulated Markets

As per the provisions of Madras Commercial Crop Act, 1933, 4 regulated markets were functioning in Malabar region under Malabar Market Committee in **kerala**. However, these markets were closed as per the direction of Hon'ble High Court. As such there is no market regulation in Kerala. There are 6 Agricultural Wholesale Markets in Kerala under the control of State Agricultural department, out of which 3 are Urban Whole Sale Markets and 3 are Rural Wholesale Markets. The Agricultural Urban Wholesale Market in Maradu, is one of the main wholesale market in Ernakulam district. The market authorities charge rent for the stalls from the traders. The traders buy produce from farmers and also bring from other states. Farmers bring their produce to the market once in a week and the traders buy directly from them. At present this Market is not charging anything from the farmers or traders for this service.

APPTA Market (Agricultural Products Producers and Traders Association Market) is a Modern Fruit and Vegetables Market constructed at Nagercoil near Kanyakumari in **Tamil Nadu**. It is the important major assembling centre for fruit

and vegetable in a radius of 50 km. The infrastructure facilities provided in the markets are wholesale shops (131), retail shops (504), covered auction hall, open auction platforms, storage godowns, precooling / ripening chambers and drying yard. Input shops for fertilizer, seed, pesticides and grocery shops are also constructed in the market complex. Provision is made for other public utilities like drinking water, drainage, toilets, post office, bank, internet kiosk, police out post, bus stop, famers guest house, tea shops, hotel and restaurant.

Appropriate handling capacity of the market is 3,000 MT of Fruit and Vegetables per day. The arrivals are reported from within the district and neighbouring Tirunelveli and Tuticorin districts in Tamil Nadu. Despatches are mainly to Kerala markets and some quantity to the northern districts of Tamil Nadu, Chennai and Bangaluru. The revenue for the market is from entrance fee, rent and maintenance charges. The unexpected risk factors are huge investment but lesser return, higher land cost, high interest burden, less amount of subsidy and very important lack of government support. Due to these reasons the market is financially weak and they are unable to repay the bank loan.

In the State of **Bihar**, the APMC Act has been repealed w.e.f. September, 2006. The existing market infrastructures created earlier by the Bihar State Agricultural Marketing Board in the State are used by the Trader and operating from their shops allotted to them on rent. The Nodal Officer (SDM) is in-charge of the unregulated markets and no market fee are charged from the farmers. However, other charges towards loading/unloading/Hamal charges are in vogue. Similar is the situation in other unregulated markets where there is no regulation through State APMC Act. However, in the absence of any regulator/facilitator for functioning of unregulated markets are deprived of development of marketing infrastructure and are inhospitable to the users. Some private markets like APPTA market in Tamil Nadu are financially weak due high expenditure on creation of market infrastructure and low income. Therefore, it is necessary some financial incentives may be provided in the form of soft loans or subsidy to the private sector by the Government so as to enhance their marketing efficiency and facilitate farmers for better returns of their produce.

The status of Regulated Markets is quite discouraging as pointed out in the XI Plan report and led to inefficiencies as listed below:

Market Infrastructure

- one-fourth of the markets have common drying yards, trader modules;
- Covered or open auction platforms exist in two third of regulated markets;
- Trader modules, viz, shop, godown and platform in front of shops exist in only 2/3rd of regulated markets;
- Cold Storage units exist only in 9% of markets;
- Grading facilities exist in less than 1/3rd of markets;
- Farmers' resting facilities 50% of markets;
- Basic facilities like internal roads, boundary walls, electric lights, loading and unloading facilities, weighing equipments etc. not available in nearly 20% markets;
- Inaccessibility to markets as markets are located far from farms;
- Restriction on the sale of produce outside regulated market yards in almost all the market reformed States;
- Multiple intermediaries and exploitation by middleman;
- Lack of cleaning, grading, electronic weighing and quality certification facilities;
- Prevalence of multiple simultaneous auctions and even undercover system of auction; and
- Electronic auctioning present in very few markets

Multiple Tax Structure:

- The multiple tax regime in the form of commission charges, market fee (varies generally between 0.50% to 2.00%), octroi/ entry tax, sales tax, weighing charges, labour charges for handling, loading and unloading, though vary from state to state and commodity to commodity is estimated to be approximately **more than** 12% of the total value of produce marketed;
- The commission charges vary from 1% to 2.5% in food grains, and 4% to 8% in case of fruit and vegetables. These commission rates have not been reduced despite infrastructure developments in these markets. The high incidence of commission charges on agricultural / horticultural produce renders high marketing cost, and cascading effect in marketing;

- Lack of uniformity in market fee across states and commodities;
- In many states, multiple point market fee is levied on each transactions in the market yard/notified market area and across State borders;
- Price discovery is not transparent; and
- Delay in payment to farmers.

Multiple License System

- In many states, there are separate mandies for cereals and fruits-vegetables, which requires, obtaining more than one license that too separately for each product;
 - Discrepancy in issue of licenses, some issue for one year while some for three years; and
 - Separate license for weighment and other market functionaries
 - Conditions imposed for licensing: These restrictions result in logistical complexities and create inefficiencies in the value chain
- a. Declaration of warehouses at the time of applying license. Agri commodities markets being dynamic due to price & quality and availability of a particular warehouse at the time of actual procurement decision, it is very difficult to declare the warehouse in advance for practical reasons. This requirement also increases warehousing and logistics costs.
 - b. Procedure for filing of APMC returns and mandi fee payment (periodicity) is not uniform. Though license approval is centralized, the other procedural aspects of filing returns, payment of market cess, assessments are decentralized.
 - c. Some illustrations of state wise conditions imposed for issuing license for direct buying from farmers by private sector are cited below;

MP:

- Buying point cannot be in factory premises and should be minimum 3 kms from the market yard

Rajasthan:

- Should buy minimum of 2000 MT (soya & wheat) qty per market yard,
- Fixed Deposit Receipt (FDR) for one day's maximum purchase to be deposited security with respective APMC
- Buying point should be located only outside municipal limits. Non availability of infrastructure and higher logistics costs

UP:

- Payment to the farmers by Cheque only
- Restrictions to sell in open market if bought under the license issued for direct farmer buy (if quality not suitable for processing for ITC brand specs or other excess stocks un utilized for self consumption)

Documentation issues: Need to obtain documentation clearances (anugya patra, gate pass, 9R/6R etc) for every despatch from the respective APMC where sourced from farmers directly leading to logistics issues and higher costs

The index of infrastructure at state level compiled by CMIE shows that infrastructure is relatively well developed in states like Kerala, Tamil Nadu, Haryana and Gujarat and continues to be weak in MP, Bihar and Rajasthan.

Status of Policy Reforms:

For the purpose of providing alternate choice to the farmers for sale of their produce and bring reforms in the existing system for promoting vibrant competitive marketing system, the Ministry of Agriculture, Government of India had set-up a Task Force on Agricultural Marketing Reforms. The Task Force had suggested promotion of new and competitive Agricultural Markets in private and co-operative sectors to encourage direct marketing and contract farming programmes, facilitate industries and large trading companies to undertake procurement of agricultural commodities directly from the farmer's fields and to establish effective linkages between the farm production and retail chains. The Ministry of Agriculture also formulated a Model Law on agricultural marketing entitled "State Agricultural Produce Marketing (Development & Regulation) Act,

2003 in consultation with the States Government for their guidance and adoption. The table shows the status of progress of reforms in APMC acts²

Progress of Reforms in Agricultural Markets (APMC Act) as on 31.05.2011

Sl. No.	Stage of Reforms	Name of States/ Union Territories
1.	States/ UTs where reforms to APMC Act has been done for Direct Marketing; Contract Farming and Markets in Private/ Coop Sectors	Andhra Pradesh, Arunachal Pradesh, Assam, Chhattisgarh, Goa, Gujarat, Himachal Pradesh, Jharkhand, Karnataka, Maharashtra, Mizoram, Nagaland, Odisha, Rajasthan, Sikkim, Uttarakhand and Tripura.
2.	States/ UTs where reforms to APMC Act has been done partially	a) <u>Direct Marketing</u> : NCT of Delhi, Madhya Pradesh b) <u>Contract Farming</u> : Madhya Pradesh, Haryana, Punjab and Chandigarh c) <u>Private market</u> Punjab and Chandigarh
3.	States/ UTs where there is no APMC Act and hence not requiring reforms	Bihar*, Kerala, Manipur, Andaman & Nicobar Islands, Dadra & Nagar Haveli, Daman & Diu, and Lakshadweep.
4.	States/ UTs where APMC Act already provides for the reforms	Tamil Nadu
5.	States/ UTs where further action is required for the reforms	Meghalaya, Haryana, J&K, West Bengal, Puducherry, NCT of Delhi and Uttar Pradesh.

* APMC Act is repealed w.e.f. 1.9.2006.

Status of APMC Rules

Only the State of Andhra Pradesh, Rajasthan, Maharashtra, Orissa, Himachal Pradesh, Karnataka, Madhya Pradesh (only for special license for more than one

² Report on working group on Agriculture Marketing infrastructure(Physical Markets), DMI

market) Mizoram (only for single point levy of market fee) and Haryana (only for contract farming) have notified such amended Rules so far.

Other Marketing Reforms initiatives

In order to bring reform in other areas of agricultural marketing, following steps have been taken by the Government to make the sector more competitive and responsive to the requirements of trade and industries:

- i) Essential Commodities Act has been amended and the list of commodities has been reduced from the preview of the Act. However, the Government has recently imposed the Control orders on movement and storage of essential commodities, which is going against the spirit of reform. It should provide for imposition of trade and marketing restrictions only during the emergency.
- ii) The Warehousing (Development and Regulation) Bill 2007 has been passed, Authority is in place and Rules are being framed. The Rules may be put in place early for implementation of warehouse receipt system in the country.
- iii) The Bill for amendment in Forward Contracts (Regulation) Act has been placed before the Parliament for approval. It should be expeditiously passed to give more teeth to the FMC for effective regulation of trade in futures.
- iv) The Integrated Food Law has been passed by the Parliament and the Food Authority has been set up for implementation of the Act.

Recent Initiatives for promoting Market Reforms

In order to expedite the pace of market reforms the Ministry of Agriculture has set up a Committee of State Ministers In-charge Agricultural Marketing on 2nd March, 2010, with members from the state of Maharashtra, Gujarat, Haryana, Uttarakhand, Bihar, Assam, Orissa, Andhra Pradesh, Karnataka and Madhya Pradesh. The Committee had, to begin with, decided to hold the discussions with all the stakeholders by holding consultations and meetings in all the member States.

The Committee has reviewed the progress of the amendments carried out in Agricultural Produce Market Committee Act by various States as per the Model

Act provided by the Ministry of Agriculture in 2003. Committee has also apprised of the schemes of Government of India for providing assistance for Market Infrastructure Development including the recently launched Terminal Market Complex scheme. The Committee is yet to submit its report. However, members felt that there is an immediate need to promote the reforms in agricultural marketing system for development of market infrastructure, supply chain and linkages to enable the farmers in getting remunerative price for their produce while facilitating the consumers in procuring the required commodities at reasonable price. There is a need to promote both private investment and alternative marketing channels to improving the marketing system of agricultural produce by way of direct marketing contract farming and setting up of markets in private and co-operative sectors, e-trading, etc. The Committee has decided to hold deliberations with the States, which are yet to carry out the reforms. The Committee also interacted with various stakeholders and industry to obtain their feedback on the requirements for development of markets.

The Government of India has also decided that assistance under NHM and MI Schemes for development of market infrastructure projects to State Agencies/APMCs would be subjected to waiving of market fees for perishable horticultural commodities and permit direct marketing by farmers to consumers, processing units, bulk buyers of cold chain facilities/storage/contract farming. However, it has been provided that reasonable user charges can be levied for use of market facilities and infrastructure.

Intensive deliberations have taken place with the concerned State Governments and other stakeholders for implementation of the different provisions of the Model APMC Act. It has been suggested that due to changed scenario of market and new upcoming innovative marketing channels from the private sector, it is necessary to incorporate some of the suggested new provisions in the Model Act for efficient marketing.

Status of Government Schemes:

Apart from APMC reforms, Government of India has come up with as many as 51 schemes during current financial year 2010-2011 under 11th Five year plan for funding central infrastructure and to provide assistance to states for development of agriculture infrastructure. DAC schemes are classified into central sector, centrally sponsored schemes and state plan schemes. Classification of agriculture schemes into CS, CSS and SP leads to a lot of procedural complexity and variation in terms of authority to sanction, process, proportion and timing of release of funds etc and at the final point of implementation .i.e at the village level, most of these schemes get converged and are implemented by a small set of agriculture staff. This has led to duplicity of work.

Apart from DAC, ministry of food processing, Ministry of Commerce also have funded schemes for infrastructure development.

Schemes Funded By DAC and under restructuring process for Twelfth five year plan

Agency	Scheme	Type of Scheme	Status
DAC	Marketing Research and information Network	Central sector	Proposed to be merged in CAI &ES
	Developing and maintaining AGMARKNET Computer hardware and software is provided to State Agricultural Marketing Boards/APMCs		Proposed to be merged in RKVY
DAC	Strengthening of CS Agmark grading facilities		Proposed to be merged in RKVY

**. This scheme can be scrapped as its anyway covered by the other scheme pertaining to Development & CS strengthening of Marketing Infastructure*

DAC	Development and CS strengthening of agriculture marketing infrastructure, grading and standardization	Proposed to be merged with RKVY (Infra&Info). <i>However, it should not be merged as implementation, monitoring and review would be difficult under RKVY scheme</i>
DAC	Grameen CS Bhandaran Yojana	Proposed to be merged with RKVY (Infra&Info) <i>It should not be merged with RKVY and should be left as an independent scheme as implementation, monitoring and review of such an omnibus scheme would be difficult</i>

DAC	SFAC	CS	Proposed to be scrapped
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Source: F.No.M-12043/12/2011-Agri, Planning Commission, GOI

Apart from the above mentioned schemes which are in the process of restructuring DAC is implementing ambitious schemes like³

- Rashtryia Krishi Vikas Yojana has an outlay 25,000 crore. Under RKVY, States have undertaken projects in the field of Micro/Minor irrigation, watershed development, horticulture, marketing infrastructure, Animal Husbandry, etc.
- The National Food Security Mission (NFSM)- NFSM was launched in the country in 2007-08 to enhance the production of rice, wheat and pulses by 10 million tonnes, 8 million tonnes and 2 million tonnes respectively by the end of the 11th Plan
- A centrally sponsored scheme on “National Horticulture Mission” has been launched with the objective for holistic development of horticulture sector including the development of post-harvest infrastructure, while ensuring proper backward linkages. Assistance is provided for setting up rural primary markets/ apni mandis, whole sale markets to link farmers to the consumers. Since the launch of the scheme in 2005-06, 245 rural primary markets have been sanctioned under NHM with an assistance of Rs 11.12 crore. During the same period, Rs 115.83 crores has been provided for creation of market infrastructure for horticulture crops in 86 wholesale markets. In principle approval has been given for establishment of 5 wholesale markets (4 in Karnataka and 1 in Gujarat) in private sector.
- Strengthening of Agricultural Marketing Infrastructure, Grading and Standardization : The scheme is reform linked and launched in 2004, implemented in those States/Union Territories, wherein, the law dealing with agriculture markets (Agricultural Produce Marketing Regulation Act) allows setting up of competitive agricultural markets in private and cooperative sectors, direct marketing and contract farming by NABARD.As

on March, 2011 NABARD has assisted 5901 projects with a subsidy of Rs 397.72 crore.

- Under the scheme of Horticulture Mission for North East and Himalayan States (HMNEH), assistance @ 50% of the capital cost (limiting to Rs. 20.00 lakh per unit for rural markets/apni mandis/direct markets and subsidy @ 33.33% of the capital cost of the project (limiting to Rs. 100.00 crore for wholesale markets) is provided to the North Eastern and Himalayan States for development of marketing infrastructure for perishable horticultural commodities. During the XI Plan, 4 wholesale markets, 70 rural primary markets/apni mandi have been sanctioned with the subsidy of Rs. 2.52 crore.

• **4.1. Schemes funded by other Ministries**

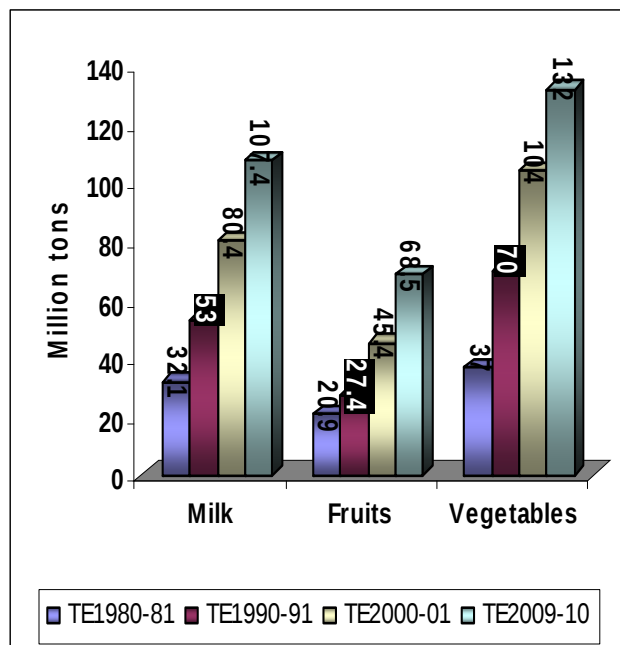
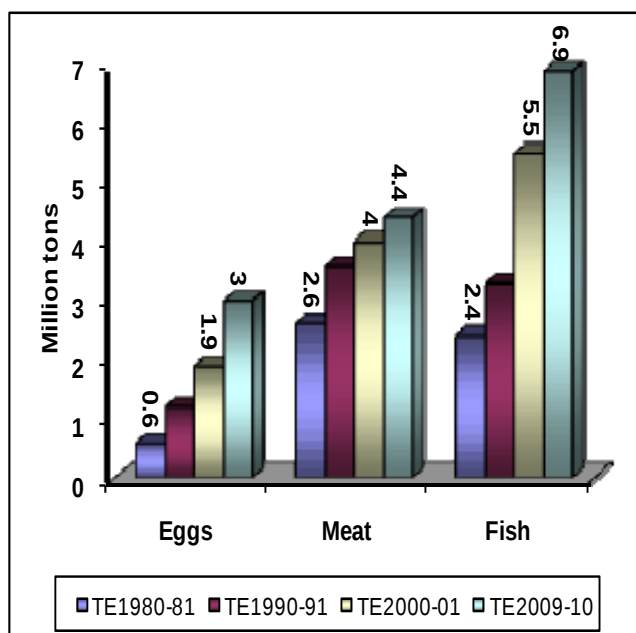
Min of Food Processing	Scheme for Infrastructure Development 1. Setting of Mega Food Park 2. Cold Chain Infrastructure 3. Modernization of Abattoirs
Min. of Commerce: APEDA	A. Scheme for Market Development 1. Packaging Development 2. Feasibility Studies, Surveys, Consultancy and Database Up-gradation 3. Export promotion & market development B. Scheme for Infrastructure Development a. Establishment of common infrastructure facilities by APEDA or any other Government or Public Sector agency like Airport Authority of India or Port Trust etc. b. Specialized Transport Units c. Mechanization of harvests d. Sheds for intermediate storage, grading, cleaning e. Setting up of mechanized handling facilities including sorting, grading, washing, waxing, ripening, packaging & palletisation etc. f. Setting up of both pre cooling facilities with proper handling system as well as cold storage for storing g. Providing facilities for preshipment treatment such as fumigation, X-ray screening, hot water dip treatment, Water softening Plant h. Setting up of integrated post harvest-handling system (pack houses / green houses with any two or more of the above facilities) i. Setting up of vapor heat (treatment, electronic beam processing or irradiation facilities j. Assistance for setting up of environment control system e.g. pollution control, effluent treatment etc k. Setting up of specialised storage facilities such as high humidity cold storage deep freezers, controlled atmosphere (CA) or modified atmosphere (MA) storage etc.
	C. Quality Development 1. Promotion of Quality and Quality Control 2. Capacity Building and Organisation Management D. R & D for export enhancement E. Horticulture Transport Assistance

Source: Agri Marketing Summit, 2009; CII

Gaps and Challenges for Changing Face of Agriculture

With increasing per capita income, Indians are consuming more fresh and processed horticultural products and other high value articles. Exports and imports of horticulture products are increasing, although lately imports have been increasing faster than exports. The entry of corporate sector in developing and delivering market driven technologies, contract farming, direct marketing and exploring markets for exports are providing new dimensions to agriculture and agricultural marketing. In addition, the increasing demand for high value commodities and agri-processed products in domestic and internal markets has put pressure on agricultural marketing.

The figure below shows production of High Value Commodities over the years:



The Mid Term Appraisal of Eleventh Five Year Plan reflects these concerns and points out the challenges for future:

- Abolition of all levies (on rice or sugar), free movement of goods across the country(one unified national market)
- Abolition of stocking limits, of export bans, and of bans on future markets on private trade..
- Improving marketing conditions and encouraging private sector participation require reforming the APMC Act and abolishing the Essential Commodities Act (ECA).
- Cleaning up these archaic provisions can trigger private sector investment in developing regularized markets, logistics and warehouse receipt systems, futures markets, and in infrastructure (such as cold storage, grades and standards, and quality certification) for large domestic markets as well as imports and exports.
- These steps are particularly relevant for the high-value segment that is currently hostage to high post-harvest losses and weak farm–firm linkages
- For the meat sector to be more vibrant, profitable, export-oriented, and a provider of safe meat, it is necessary that a perceptible shift takes place from the unorganized to the organized sector
- The National Horticulture Mission has not been able to get adequate attention from the states for post-harvest management and market development. While only 11 states have taken an initiative in establishing 109 cold storages and eight states have established 51 apni mandis, there is virtually no progress in the setting up of wholesale markets except in Kerala.
- The current storage capacity with state agencies is much lower than the stocks that they often carry, leading to large wastages (8–10 per cent); reassessment of the optimal level of storage of food grains in the wake of increasing volatility needs to be taken up on a high priority

Apart from The Mid Term Appraisal report the following gaps have been reported

- In many places there is no functioning market yard. Transactions take place between farmer and middleman who then undertakes further sales proceeds depending upon demand. Small Farmers with their meager marketable surplus are unable to take their produce to nearby market due to uneconomic lots for sale. Money lenders are prevalent because of lower income of farmers, higher risk, default at banks, tenant farmers who cannot get formal credit and so on;
- Most cold storage and refrigerated transport capacity is operated by small, non integrated firms that do not make use of state – of – the – art technology or management practices leading to high cost of operation;
- The existing rural infrastructure is far from adequate. Nearly half of the villages are still not connected by roads. According to the studies at International Food Policy Research Institute (Washington, USA), the returns from investment in rural roads, both in terms of reduction of poverty and acceleration in economic growth, are the highest compared to that in other rural development activities like irrigation, watershed development and education. Tele-density, which was 2.32 per cent, increased to 64.34 per cent in November 2010. However, there is a wide gap between rural tele-density (30.18 per cent in November 2010) and urban tele-density (143.95 per cent in November 2010). This shows that the market still has large untapped potential which need to be tapped for efficient dissemination of market information.
- Grading at primary market level is grossly inadequate. There are only 1637 grading units at the primary level, which include 125 units with cooperatives and 144 units with others. At the level of regulated markets, there are only 1368 grading units in a total of 7157 market yards/sub-yards. Only around seven percent of the total quantity sold by farmers is graded before sale. During 2009-10, 7.97 million tonnes of agricultural produce valued at Rs 12089 crores were graded at primary market level. The scientific storage capacity is only 30 per cent of the required capacity. Cold storage facility is available for only 10 per cent of fruits and

vegetables. Transportation and handling facilities for perishable commodities are inadequate and poor. The processing capacity is also inadequate and mostly inefficient. Physical infrastructure in market yards is inadequate. Most of the rural primary markets (including livestock markets) have no infrastructure. Due to lack of proper handling (cleaning, sorting, grading and packaging) facilities at the village level, about seven percent of food grains, 30 per cent of fruits and vegetables and 10 per cent of spices are lost before reaching the market.

- Since the density of Regulated markets are falling short of the requirements to handle increased agricultural production and the distance varies across the States, it is necessary to set up markets nearer to the farmers' field for easy access of markets for disposal of farm produce.

Recommendations:

The challenges for XII five year plan is to revitalize mandi yards and strengthen markets for high value commodity like livestock, horticulture products, fisheries with state of the art infrastructure. The recommendations for twelfth plan are as follows:

Recommendations related to APMC Act

- To provide the maximum benefits of Model Act to the farming community and increase private sector participation in agriculture sector sincere efforts are required by the State governments to adopt the Model APMC act. All States to follow the Model APMC Act in letter & spirit. Essential features of the Act not to be mutilated , Rules to be notified within one month of amendment of the Act, Single licensing at the State level at a reasonable cost for procurement and trading of agricultural commodities, No restrictions in terms of distance from the existing markets, Government of India to review amendment of the Act through departmentally or through outside consultant from time to time
- A comprehensive study of APMC acts amended by the States *vis-a-vis* Model APMC Act and its implementation has to be undertaken so that the

need for further modification in the Act for ensuring better market access for the farmers can be explored;

- Additional incentives to be given to States which are implementing effective market reforms
- Exploitation of farmers by commission agents needs to be checked by promoting direct linkage between farmers / producers and retailers / processors through other innovative marketing channels;
- Regular elections should be held of agricultural produce market committees and bring professionalism in the functioning of existing regulated markets
- To protect the rights of the farmers as well as sponsors of contract farming, a dispute settlement mechanism should be set up through pendulum type of arbitration.
- The market fees should be ploughed back for development of marketing facilities and investments for creation and/or up gradation of infrastructure in market yards/sub-yards
- There is a need for bringing uniformity in the state-level tax structure in agricultural commodities for improving the market efficiencies. Taxes and fees on raw agricultural commodities should be rationalized, with a ceiling limit of 4 per cent;
- There is need to either deregulate the fruit and vegetables from the list of notified commodities under APMC Act or market fee should be waived off. The loss of revenue towards waiving of market fee may be compensated to the reformed States.

- Direct marketing of fruits and vegetables are to be allowed by bringing fruits and vegetables outside the ambit of APMC act to cut various intermediary levels; However, there needs to be a suitable alternative marketing space for sale of fruits and vegetables which can attract private investment with the same SOP as in APMC Markets
- Compulsory Registration of Buyers and Sellers and Active Role for APMC– At present, only Trader/Commission Agents are registered / licensed by APMC who have responsibility towards seller and APMC. More often, the brokers do sell the produce to traders on credit and do not have security of payment. This is cited as one of the most important reasons for lack of transparency in auction system. Therefore, it is proposed that the buyers in any APMC must be registered by APMC and should be given a credit limit. *'Seller may get himself registered with APMCs of his choice. After auction of produce, the seller may collect payment towards price of goods sold from APMC. It will be for APMC to collect payments from the buyers. This will not only improve the functioning of existing APMCs but also remove impediments in investment and operationalisation of modern markets with electronic auction system'.***(comments- it can not be done as there is no such provision under APMC Act. Farmer-seller is not required to register with APMC. Pledge financing can be suggested to be implemented in case of distress sales by the farmer.)**
- Level playing field to be provided between existing APMCs and upcoming private markets. An independent regulator should be appointed to frame service parameters and to resolve disputes between APMC and private markets, regulator must be other than APMC;
- Transparent Auction Systems and Price Discovery Mechanisms to be installed in all regulated markets;
- Professionalization of existing APMC Markets:
 - Professional manpower and Improved management systems;
 - Extended Services to the farmers, traders, exporters etc.

- State Governments to consider disinvestments of under-performing, non-profitable APMCs, Private sector to be invited for operation & management;
- No Market Cess or Supervisory Fee should be charged on perishable products like fruits, vegetables and flowers purchased through contract farming;
- Simple and facilitating contract farming agreement may be introduced to facilitate more players in such vocations;
- Existing national grade standards should be harmonized with international grade standards;
- Grading facilities at all the stages of marketing chain should be upgraded with the establishment of grading units and pack-houses in the villages/sub-yards, establishment of grading laboratories at appropriate locations;
- Value addition activities such as cleaning, grading, packing, primary processing, and storage should take place nearer to the farm or production center;
- Organization of the farmers into growers' groups/commodity groups/cooperatives/self help groups/producer companies to ensure the participation of diversely located small and marginal farmers and their linkage with the markets;
- Develop 4000 Rural Primary Markets/Rural Periodic Markets/Rural Haats (out of 21000);) through incentivizing private sector investment and involving Panchayat Raj Institutions
- Modernize principal market and sub-yards;

- Encourage setting up of new wholesale markets by the private sector or in PPP mode;
- Set up Terminal Markets in major States under PPP mode to provide forward and backward linkage;
- Encourage Setting up of Farmers Markets in all major producing States to achieve a target of 50 per cent of the marketed surplus getting sold directly through these markets;
- Strengthen consumers markets run by the municipal corporations/councils for fruits and vegetables;
- Warehouse and Silo may be treated as virtual mandi to avoid double transportation
- Marketing is a service industry. Private investment will not only bring in additional investment in infrastructure but also provide efficiency in services, and set up benchmarks for service quality
- Companies providing quality private infrastructure should be exempted from paying the mandi fees
- As far as documentation is concerned, such private players may be allowed to use the relevant documentation like sauda patra, anugya patra and bhugtan patra on a self declaration basis. Necessary checks and controls can be put in place and monitored by the mandi authorities in a centralized manner by verification of returns filed, as in case of commercial taxes
- The states like Bihar and Kerala where the APMC Act have been repealed there may be steps taken to create an alternative marketing infrastructure either through intervention from state government or through attracting private investment to create suitable marketing infrastructure for Agriculture produce including High Value Commodities

Recommendations related to Supply Chain Management:

- Organized logistic players, processors and retailers are to be encouraged to develop markets. Viability gap funding for the initial years may be extended on soft terms by Government;
- Dedicated railway wagons for transportation of perishable produce from major production centers to terminal markets or metros are needed;
- Extending Status of Warehouse to Cold Storages / CA Storages and extending coverage of scheme of warehousing Receipt System to Horticulture Produce fit for long duration storage such as potato, onion, apples etc;
- Encourage setting up of new wholesale markets by the private sector or in PPP mode;
- In order to intensify the private sector for creation of much required storage capacity for agri-commodities as a support to Physical Market, the subsidy/incentives under Gramin Bhandaran Yojana of DAC, Govt. of India should continue during the 12th Plan period as a separate Central Sector Scheme. However, the out-dated cost norm of Rs.1875/- per MT needs to be revised to Rs.3500/- per MT considering the present cost of construction. Further, subsidy available to various eligible categories may be suitably enhanced to attract the private sector to aggressively participate in the creation of storage capacity for agri-commodities in rural areas
- Agri Warehousing including Cold Chain Infrastructure needs to be accorded the status of "Infrastructure" thus making the same eligible for various benefits/incentives available to agricultural projects. Though, in the Budget 2011, it has been proposed that Warehousing is accorded the status of Infrastructure, necessary notification is yet to be issued by the Finance Ministry

- Loans for construction of warehouses for agri commodities to be considered as priority sector lending eligible for subsidised interest rate i.e. at par with the Crop Loan
- Financing against pledge of Warehouse Receipt should also be considered as a priority sector lending eligible for subsidised rate of interest at par with the Crop Loan
- Encourage Setting up of Farmers Markets in all major producing States to achieve a target of 50 percent of the marketed surplus getting sold directly through these markets;
- Strengthen consumers markets run by the municipal corporations/councils for fruits and vegetables;
- The storage capacity gap of nearly 57 million tonnes at current trend of agricultural production an investment of Rs 14390 crores, may be considered for efficient handling and marketing of agricultural produce;
- Agri. supply chain is poorly integrated and highly intermediated posing challenges for efficient marketing. There are huge gaps in the system, both in terms of capacity – Total Cold Storage capacity in the country at present is only 20% of the targeted capacity and Integration – Critical Linkages like Reefer Transport and On Farm infrastructure are almost nonexistent which needs to be strengthened;
- A realistic target of developing cold-chain was – To handle 15% of F&V in next 4 years and 40% in 6 years. The investment required – Rs. 22,035 Cr to gear up infrastructure to handle 15% of total F&V production and Rs. 55,074 Cr to handle 40% of total F&V production
- Long-term stability in government policy initiatives to encourage private sector participation in agri-marketing infrastructure and services. State

level Agricultural Marketing Policy or Agricultural Business Policy should be formulated and announced;

- Agricultural markets and related infrastructure to be considered as 'Infrastructure' and concessions applied for infrastructure sector to be extended;
- Amendment in EC Act to facilitate the creation of barrier free national market for the benefit of farmers and consumers ;
- Remove of inter-state barriers for Unified National Market;
- Applied research for developing Post Harvest Management protocols and facilitating introduction and enforcement of quality parameters like Codex / Agmark are to be given top priority;
- Setting up of Special Purpose Vehicle (SPV) for development and promotion of appropriate transport system for perishables is needed.

Others:

- Promote formation of small producer agencies in rural areas for bulk production and procurement at the village level through seeking active involvement of PRI members;
- Integrated approach so as to build strategic linkages between extension bodies at the grass roots like KVK and Common service Centre and Market yards so that grading training ,market information and good agriculture practices can be handled by KVK at block level and farmers have more than one reason to visit KVK to avail extension as well as marketing information;
- Training of farmers and traders on Post Harvest Handling, Supply Chain Management and Marketing should be done frequently and more effectively through bodies like NIAM,MANAGE,DMI,NCCD,NSDC,CIPHET, SAMETI

- Promote formation of marketing self help groups for organised marketing; and
- Exploitation of farmers by commission agents needs to be checked by promoting direct linkage between farmers / producers and retailers / processors;
- Livestock markets and abattoirs are mostly in the unorganized sector. For the meat sector to be more vibrant, profitable, export-oriented, and a provider of safe meat, it is necessary that a perceptible shift takes place from the unorganized to the organized sector

5.2 Virtual Markets

Introduction and Overview:

Virtual Markets, in the context of Agriculture Marketing, may be defined as, “an electronic market, which enables producers and buyers in the supply chain to access each other spread across the country, *with a view to transact at the most efficient and transparent prices, thereby reducing the cost of intermediation, improving marketing efficiency and producers’ realization coupled with reduction in consumer paid price.*”

In other words, it is an electronic transaction platform for commodities where buyer and seller carry out trade in anonymous manner through ICT (Information, communication and technology) applications.

Categories of virtual market

- **Futures Exchange**
- **Spot Exchange**
- **Warehouse Receipt System**
- **ICT based Market Information**
- **Web Marketing**

- **Futures exchanges**
 - significant progress in the growth and development of futures exchanges in India
 - At present, there are 5 national level futures exchanges and 16 regional level futures exchanges.
- **Spot Exchanges**
 - Spot Exchange is an electronic platform, where the farmers can sell farm produce, while upcountry traders, buyers, processors, exporters, and end-users can buy or sell electronically through competitive on line bidding.
- **Market Information System (MIS)**
 - Marketing Information System is indispensable and essential for the farmers, traders and consumers for improving their marketing of agricultural Commodities

Futures Exchanges

- Futures market performs two important functions:
 - Price discovery and
 - Price risk management in respect of a commodity.
 - These are useful to all segments of the economy.
- Useful to the farmers,
 - as he gets an idea about likely behavior of commodity prices in future
 - Can choose which crop to grow out of competing crops.
 - can decide when to sell and what prices to expect. He
- Futures contracts enable the actual users to hedge their price risk by taking an offsetting position on futures exchanges against their physical inventory or future raw material requirement.
- The market is a combination of multiple participants – hedgers, speculators, investors, financiers, jobbers and traders. All these components are essential ingredients for success of a market.

Turnover & Critics

Rs. Lakh Crores

	MCX	NCDEX	NMCE	ICEX	ACE	Others
2006-2007	22.9	11.7	1.1			1.0
2007-2008	31.3	7.8	0.3			1.4
2008-2009	45.9	5.4	0.6			0.6
2009-2010	63.9	9.2	2.3	1.4		0.9
2010-2011	98.4	14.1	2.2	3.8	0.3	0.7

On the positive side, the commodity exchanges have created an effective hedging tool for the hedgers to offload their price risk on the market, which improves their price efficiency and enables them to compete in the global market more effectively.

On the negative side, participation of hedgers has not kept pace with the growth of the market.

However, beyond both these points, the commodity exchanges have stimulated some positive structural and infrastructural changes in the market, which was hitherto missing since decades.

Impact of Futures Exchanges

- There have been significant developments in the emergence of professional warehousing and logistic companies, employment generation without any load on exchequer, etc. In the banking sector, RBI has come out with guidelines to promote agri financing, because price discovery at futures exchanges have provided them better tools to manage risk.
- Commodity exchanges have stimulated the construction of quality warehouses, because they assure financial viability of the warehouses through assured business, either in terms of monthly rental or franchise model.
- They have promoted the concept of grading and quality certification in respect of agriculture commodities. Today farmers are well aware about growing such crops which are fetching good prices on commodity exchanges and which match with the quality norms of the commodity exchanges.
- Farmers are not participating directly on the futures market in large numbers though indirectly they derive advantages of price discovery process of futures markets

Problems faced by farmers in Futures Exchanges and solution thereof

- If the price goes up, he has to pay MTM on daily basis, he faces problem in arranging funds, so the system of daily clearing and MTM settlement is not conducive to the farmer.
- He gets realization for his produce only on maturity of futures contract, but he needs money immediately on delivery which is not possible on futures exchanges.
- Futures contracts provide for delivery at limited centers, if the farmer is away from the specified delivery center, he cannot afford to transport, take the risk of rejection of quality.
- If he hedges to protect against the price fall, he faces problem if the basis(Difference between spot and futures price) is increased. For example, if imported Tur futures contract goes up, while spot price of local Gulbarga Tur does not go up significantly, then the Gulbarga farmer who hedged against his physical stocks is trapped. He incurs huge loss because of distortion of basis in such cases. A deeper, more liquid and mature market will reduce basis risk.
- Options contract that way is much more suitable for the farmer.
- In view of these issues, ideally there should be a futures contract to be used for price reference and hedging, while there should be equally transparent spot exchange providing spot contracts deliverable at all important arrival centers, which can be used by the farmers to sell their produce and to realize better price.
- Hence, a combination of futures exchange and spot exchange is the ideal model to bring out structural reforms in agriculture marketing.
- Under this model, both spot exchange and futures exchange will complement each other and provide a great service to the entire commodity eco-system.

Spot Exchanges

Electronic Spot Exchanges: Overview

- The central government as well as various scholars and scientists are of the view that sustained growth in agriculture is possible only through structural reforms in Agricultural Marketing. It is also true that setting up of Electronic Spot Exchanges for agricultural produce is by far the strongest initiatives to spur such agricultural reforms, because it brings large number of buyers and sellers on the same platform and so, the exploitation of farmers can be immediately tackled. Better price realization by the farmers will accelerate the growth of rural economy as a whole.
- Unlike in an APMC market, the farmer sets the price on the spot exchange and is not a mere witness to the sale.
- Most importantly, it sets the marketing avenues in the competitive mode, thereby inducing competition among them to improve their utility and services to the farmer and giving him multiple choices.

Spot Exchanges: Mechanism

- Spot Exchange is a compulsory delivery based transaction platform, which enables the farmers and traders to sell their produce electronically and to realize the best possible price.
- The objective is to empower the farmer to set the price, offer an alternate marketing medium, thereby reducing the cost of intermediation and enhancing farmers' price realization, while reducing consumer paid price.
- This is achieved through enhancing marketing efficiency and bringing transparency in price discovery and marketing of agricultural commodities.
- At present three spot exchanges are functioning. These are National Spot Exchange Limited (NSXL), NCDEX spot (NSPOT) and Reliance Spot Exchange. Out of these, Reliance Spot Exchange has commenced its operations very recently.

Volume of Turnover on Electronic Spot Exchanges

Rs. Crores

Calendar Year	NSEL	NSPOT
2008	28	26
2009	2559	250
2010	17058	166
2011	122711	262

Impact of Spot Exchanges

- Homogenization of spot prices of agricultural commodities at various locations across the country
- More transparent spot price discovery, with equal opportunity to both farmers and buyers
- Alternate marketing channel for the farmers
- Induces greater transparency and consistency in the auction process in APMCs.
- Better price realization by the farmers(this has been documented and certified by State Marketing Boards)
- Increase in bargaining power and holding power of the farmers
- Electronic spot exchanges will help the futures exchanges to develop proper linkage between spot prices and future prices.

- Moreover, Spot Exchanges have implemented transparent auction models for Government companies, which has resulted into higher price realization and greater efficiency in auction.

Some examples are as follows:

- **Food Corporation of India:** FCI has used both the spot exchanges for conducting auction of wheat under OMSS in Delhi NCR as well as Andhra Pradesh.
- **MMTC, STC, PEC:** These Government companies **have used Spot Exchange platform to conduct auction of imported pulses.**
- **Nafed, Hafed, APMARKFED, RAJFED:** These state government marketing federations have used spot exchange platform for conducting auction of various commodities.
- **Cotton Corporation of India:** CCI has used NSEL to conduct auction of cotton bales.
- **NINL, Orissa:** NINL has used NSEL platform for conducting auction of Pig Iron.

Warehouse Receipt system

- In 2007, the Warehousing Development and Regulation Act has been passed by the Parliament, which provides for setting up of an independent Authority to develop and regulate the warehousing sector in the country and also to promote and regulate negotiable warehouse receipt system. Under this Act, the Authority has been set-up in 2010 and thereafter, the Act has come into force.
- WDRA has notified various Rules under the Act as well as various regulations for regulating different aspects of warehousing sector. It has commenced the process of registration of warehouses. Under this system, the warehouses, which meet the prescribed standards of storage, preservation, testing, grading and certification would be licensed by WDRA

and warehouse receipts issued by these warehouses could become negotiable. The regulation also allows trading of electronic warehouse receipts.

- WDRA has notified a list of commodities on which the provisions of WDRA will apply initially. These are mostly such agricultural commodities, which are traded on commodity exchanges. The Authority is also in the process of framing various rules relating to standard quality parameters for the specified commodities, rules relating to fungibility of goods and mechanism to regulate effectively negotiability of warehouse receipts.
- WDRA has envisaged both physical warehouse receipt mechanism and electronic warehouse receipt mechanism. However, various regulations are yet to be notified.
- However, to begin with, WDRA should focus on promoting incremental warehousing infrastructure, standardization of process, standards and practices on a uniform national scale so as to facilitate future fungibility of NWRs across warehouses of a given entity and later on, warehouses of multiple entities.
- Inclusion under WDRA being voluntary, the above factors will induce investment as well as registration with WDRA.

Market information system

- In agricultural marketing, use of marketing information system is indispensable because it is essential for the farmers, traders and consumers for improving the marketing of agricultural commodities.
- Most of the States and Union territories of India are in one way or the other helping the farmers and traders by providing the market information of agricultural commodities by way of publishing in the Newspapers, Magazines and Government Bulletins, transmitting/broadcasting on the Radio, T.V. etc.

- The following organizations are involved in providing market prices and other information:-
 - State Agricultural Marketing Boards/Directorates;
 - Directorate of Economics and Statistics, Government of India;
 - Directorate of Marketing & Inspection, Government of India (AGMARKNET); and
 - National Horticulture Board.
 - FMC and National commodities exchanges (Price Ticker Board)
- **Other initiatives for dissemination of ICT based Market information**
 - DRISHTEE (Drishtee.com)
 - HARIT GYAN
 - IKISAN (Ikisan.com)
 - TATA KISAN KENDRA
 - TARAHAAT
 - N-Logue
 - EID Parry

RECOMMENDATIONS FOR XIITH FIVE YEAR PLAN

Recommendations for futures exchange

- To strengthen the futures market regulator, it is crucial to expeditiously pass the Forward Contract Regulation (Amendment) Bill. This Bill is pending for a number of years. This will provide autonomy to the regulator, which is very much important for effective regulation of markets. Moreover, the amendment in the Act will pave the way for launch of farmer friendly options contract from futures on intangibles, viz; weather index, rainfall index etc.
- RBI should allow banks, financial institutions and FIIs to participate in futures contracts. This will increase depth in the futures contracts.
- Innovative stabilization scheme could be considered which would be aimed at price stabilisation and also the saviour for both the producers as well as consumers in times of crisis.
- Exemption to be extended to brokers engaged in forward contracts / commodity derivatives trading under section 194H of Income-tax Act, 1961

- This section stipulates the payment of commission and brokerage is subject to TDS of 10%. However, it exempts *securities* brokerage/commission for the purpose of TDS deduction. As is well recognised, trading in commodity derivatives performs a very important function of risk mitigation and is operationally similar to trading in derivatives of stocks. Therefore, brokers getting commission from their clients on account of commodity derivatives trading should also be exempted under this section
- Providing 'infrastructure' status to commodity exchanges and allied agricultural infrastructure facilities under Section 80-IA of the Income Tax Act, 1961
 - Commodity Exchanges and supporting agricultural infrastructure such as rural warehouses, quality testing centres, etc. are critical elements in the agricultural supply chain. By generating substantial rural employment opportunities, they also ensure overall development of the rural economy. Hence, investments in commodity exchanges (spot and futures) and supporting infrastructure need to be promoted through tax measures so that national priorities such as agriculture and rural employment generation get the much-needed policy boost
- Transactions in securities, including transactions in Futures and options in securities is considered as genuine business transactions and therefore, profit/ loss arising there from is treated as business income/ business loss. The same treatment should be provided to commodity derivatives transactions. This can be done by amending Section 43 (5) of Income Tax Act.

Recommendations for Spot exchanges

- At present, pan India electronic Spot Exchanges are dependent upon the State APMC Laws to commence operation in a State. A number of States such as Punjab, Haryana, UP, etc. have still not amended their Law to enable Spot Exchanges.

- Spot Exchanges are designed on the lines of futures exchanges to operate pan India and promote intra as well as inter-state sale and delivery.
- Present State APMC laws are not designed to cater to such needs beyond a given APMC, let alone inter state sales and deliveries.
- A farmer's access to a pan India market through spot exchanges will give him the most efficient price in a transparent manner.
- Therefore, the Central Government should enact a legislation to enable spot exchanges to function on pan India basis, without over-riding the State APMC Laws.
- Ministry of Agriculture and Department of Consumers Affairs should jointly initiate this process.
 - ❖ The proposed Legislation may provide that:
 - ✓ Pan India Electronic Spot Exchanges may be set-up to conduct delivery based transactions in warehouse receipts
 - ✓ For transactions in and transfer of warehouse receipts, there is no need for compliance with APMC Act or VAT/ GST
 - ✓ But, at the time of deposit/acceptance and delivery of physical goods as a part of the settlement of the electronic spot trading, all such compliances, including collection of VAT, etc. should be adhered to.
 - ✓ APMC Act will apply in respect of farm produce at the time of deposit/acceptance in warehouse and release/delivery of stock, else they will not have any bearing on pan India electronic Spot Exchanges
 - ✓ FMC to be designated as regulator for such pan India Spot Exchanges under the proposed legislation as they have the expertise for regulating electronic trading.
 - ❖ It will also integrate all electronic markets to bring efficiency to both spot and futures markets and provide a common interface for WDRA.
 - ❖ A buyer in spot exchanges can immediately hedge himself in the futures exchange for price protection.
 - ❖ In the interest of farmers, there should be no mandi cess applicable on sale of farm produce on any platform other than APMCs, as cess

is linked to services rendered or infrastructure utilized. Since spot exchanges set-up their own facilities, they do not use the infrastructure of mandis and hence, mandi cess should not apply.

- ❖ A small amendment in APMC Act or a suitable provision in the proposed legislation to that effect, as may be appropriate, would be required for the purpose.
- Spot exchanges can help the Government companies to reduce their cost of procurement. The large Government organizations such as FCI, APO (Army Purchase), State Civil Supplies Departments, etc. should be directed by the Government to procure, to begin with, at least 25 % of their requirements through spot exchanges. On spot exchange platform, farmers can sell their produce, while the Government companies can buy the same directly. This will reduce cost of procurement incurred by the Government companies.
- This will encourage more effective procurement/MSP operations, especially in the non-traditional areas outside Punjab-Haryana-western UP.
- The Government may also issue direction to the large Government companies to sell their commodities through spot exchanges. This will enhance their price realization and promote transparency.
- Spot Exchanges have to spend huge amount on spreading awareness among farmers through ground level campaign. It involves manpower cost, cost of infrastructure, travelling, seminar expenses, etc. There is a huge cost on account of market development. The Government should provide fiscal support to the spot exchanges to carry out these activities in the interests of farmers or atleast FMC should include them as partners for awareness creation/capacity building like the future exchanges.
- Spot exchanges should be provided infrastructure status and they should be exempted from income tax for at least 10 years.

5.3 Training & Capacity Building

Capacity Building in Agricultural Marketing and Agribusiness Sector

Agriculture sector accounts for employment of more than 60% of the population, contributing about 16% of GDP. So far as self-employment of the sector is concerned, bulk of it is contributed by its production aspect and a vast potential on its marketing front still remains to be explored. This can be attributed partly to the paucity of infrastructure and partly to the absence of congenial regulatory regime encouraging private investment in the sector. Agricultural marketing takes care of the post-harvest activities of the crops viz. cleaning, grading, packaging, transportation, storage, processing, and development of markets for their smooth transactions and dissemination of market information. All these functions help in creation/ addition of time, place, form and possession utilities to a product. The present agricultural marketing system of the country, however, leaves much to be desired, as it is hobbled by a number of handicaps, such as lack of requisite infrastructure, long marketing channels, overriding role of middle men, low farmer's share in consumer's rupee, and unhealthy controls and restrictions discouraging private sector investment etc. Hence, there is a need to go for capacity building of all stakeholders in agricultural marketing developing skills in agricultural marketing and agribusiness is essential.

XIth Plan emphasis was on :

- Reform of APMC Regulations and Functioning Of Markets
- Upgrading of Marketing Infrastructure
- Linking up With ATMA For DAP Preparation
- Grading, Standardisation
- National Horticulture Mission, High Value Agriculture
- Commodity Exchanges & Futures Markets
- Price & Arrivals Information, Agmark Net, Hotline

Thrust areas for capacity building in XI plan

1. Post Harvest and Loss Reduction Aspects
2. Information Technology Application in Agricultural Marketing
3. Futures and Forward Markets and Commodity Exchanges
4. Food Safety, Quality Certification, Grading & Standardization
5. Ware house and rural godowns and warehouse receipt financing – operation and management
6. Marketing of Organic agricultural produce, Medicinal and Aromatics Produce by introducing primary processing
7. Skill development on management and setting up of Agro –Service Centre and custom hiring services including grading and packing to the fruit growers
8. Skill development on Export of agricultural commodities, management, operation and setting up of modern retail stores and retail vendors of fruits and vegetables.
9. Skill development on entrepreneurship in agribusiness sector
10. Marketing of value added produce
11. Cool chain management, transportation and logistics management in agricultural produce.
12. Marketing of Agricultural produce through self help groups, farmer organizations and commodity based organizations, farmers produce aggregators etc.
13. Group Marketing and Self help groups
14. Electronic spot exchanges
15. Market and marketing infrastructure and Terminal Market
16. Agricultural marketing policies and reforms
17. Agricultural waste management
18. Agricultural Marketing Finance

Institutions in Agricultural Marketing and Agribusiness

Following institutions are currently involved in education and training of skilled manpower in agricultural marketing:

- National Institute of Agricultural Marketing, Jaipur
- MANAGE, Hyderabad and its associated franchises;
- Institutes of Cooperative Management; and its associated
- IRMA (Anand, Gujarat);
- All the Agricultural Universities (Central, State and Private);
- Agricultural Colleges
- Agricultural Related Research Institutions coming under ICAR
- Indian Institutes of Management (IIMs);
- Market Intelligence Units Established by SAUs
- Institutes of Commodity Exchanges

National Skill Development Council has estimated the requirements of professional manpower in agricultural marketing and agribusiness management and has come out with the assessment that the current output of professional graduates in these areas is less than one-fifth of the current requirements of the organized sector.

Approach for XII Plan

All markets need well trained and skilled manpower to be able to :

- ☐ understand and utilise market information
- ☐ achieve higher value chain coordination
- ☐ Reduce costs by direct purchase/shipping points
- ☐ Use advanced technology for efficient marketing
- ☐ Adopt traceability and certification /standardization

Training and capacity building : Overall approach for XII plan

A. Expansion of coverage

Enhancing access

Participation

B: Training for enhancing marketing skills:

Quality, grading

Standards

Food safety

Packaging

C: Farmer's linkages with markets

Dealing with marketing chains, contract farming

Using public sources for market intelligence

D: Basic risk and credit management

E : Manpower for agribusiness management

RECOMMENDATIONS FOR XII TH PLAN

A. Coverage : massive expansion of agriculture marketing training and capacity building for farmers and training staff

- (a) farmers and farmer's organizations
- (b) field level development functionaries and extension workers
- (c) training of farm women & rural youth
- (d) improvement of skills of personnel of marketing organizations including APMCs and SAMBs
- (e) other stakeholders and
- (f) training of banking , micro finance, SHG personnel

About 100 institutions including SAU's should cover training of farmers and officials

Staff training

1/5 th of agri staff to be trained per year in State Institutes, KVKs, Agri colleges, SAUs, State Boards,

Management education

In 5 years, 50 fellows from Industry, Govt. and Academia

Post graduate mgmt stdts in integrated and specialised agri mgmt (retail, comm, PHM,etc.) in National and Regional Institutes

1 year & 18 months PG. diplomas in State Institutes open to staff, agriculturists

B. Basic marketing skills training

Identification /access through KVKs, gram panchayats, SHGs, women groups, interested farmers, farmers production & mktg groups

100 training centres x200 trainees p.mx12 = 2, 40, 000 p.a

(including KVKs, SAUs, existing and new insts)

Basic (1 day) +follow up incentives@rs1000 =120 crores

2 contact (outreach) in the year

CONTENT Basic quality, standards, grading, safety
Packaging
Dealing with marketing chains,
Contract farming ,
Sources and use of marketing information

C. Capacity building for linking farmers to markets

Contract farming :

- Training of extn. Staff for mkt oriented agriculture,
- Pvt. Sector: extn and input support, managing risk
- Training farmers in legal rights & obligations, practices

Linking with organized chains

- Capacity building in terms of production and post harvest techniques for higher quality stds
- Assisting in obtaining national and international certification

Market information and SPS

Improving market information & market intelligence

- Dial-up services, mobile phone networks
- Rural kiosks
- Vernacular media
- Krishi programmes on TV
- Demystifying AGMARKNET
- Capacity building using communication Technology

Strengthening SPS capacity building

- Awareness creation in GAP, HACCP etc.
- Food safety illustrations & demonstrations
- Training for proactive strategy on exports

D. Risk and credit management

- FMC , MCX, NCDEX, National Spot Exchange & others may coordinate and expand their farmer awareness programmes conducted through training institutions to include all 2,40,000 farmers p.a. being covered.
- Basic exposure to insurance schemes for farmers through public and private insurance providers delivery through KVK, SAU's, State Institutes.
- Regional and State Institutes of agricultural marketing to train cooperative bank, RRB and NABARD personnel in agricultural marketing and credit linkages

E. Manpower for agribusiness management

- **self financing National Centres** (north, south and northeast) for core developments in agricultural marketing & agribusiness
- National issues, branding, strategy, global commodity trade
- Training in NBT, SPS, HACCP, GAP for Sr. Executives, policymakers
- 50 fellows in 3 centres/ 5years
- 2000 students (400x5) in PG courses, PhDs
- Annual 25 crores + 5cr/year/centre corpus x3= 200 cr

4 regional and 15 state institutes

- **4 self financing regional (east, west, central and hill areas) institutes** of agricultural marketing and agribusiness
 - Training of mid level officers (certificate courses 3,6, 18months diploma)
 - Training of agriculturists and other interested individuals for PG diploma of 3 months / 6mos (4x50x5) = 1000
 - 18 months adv. Diplomas
 - Training in NBT, SPS, HACCP, GAP for Sr. Executives, policymakers
 - corpus 4x3cr p.a.x5 =60 crores+30cr p.a.x4 = rs 180 cr

- **15 State Institutes** of Agricultural Marketing in partnership with State Government and Industry
 - Advanced agriculturists training (certificate)
 - Marketing extension and market boards staff training (once in 5 years) = 6crp.a.x15x5 =Rs 450 cr
 - 7500 (15x100x5) 12 months P.G. diplomas p.a. In state institutes
- **Expansion of NIAM, MANAGE etc.,**
 - Institutions like NIAM, MANAGE and Agricultural Economics/Agribusiness departments of State Agricultural Universities should be strengthened. NIAM needs to be expanded on the lines of ICAR.
 - NIAM should establish its linkage with state agricultural marketing boards. All efforts needs to be made that each state has State Agricultural Marketing Institute on the pattern of NIAM.
 - State Agricultural Universities who have so far not initiated degree and diploma courses in agri-marketing and agribusiness, should also introduce the same.

Public- private partnership mode

- The delivery of training and manpower development services needs to incorporate private sector players as partners
- progressive farmer associations and clubs
- Farmer co-operatives and self help groups
- Producer companies
- Input dealers
- Non government organizations
- Private media
- Private banks
- Private companies
- Microfinance and other funding agencies

Estimated fund requirement

At the levels proposed the additional funds required will be of the order of rs 1000 crores for the plan period.

If the level of farmers training is increased five fold i.e. to cover 60 lakh farmers (less than 1% of the farmers) the cost will go up to around 1500-1600 crores

CHAPTER 6

Reducing Wastages

6.1 Post Harvest Losses

Food Wastage takes place at different stages

- Loss of production due to:
 - Biotic &
 - Abiotic
- Post Harvest losses
 - Lack of infrastructures & scientific storage
 - Lack of adequate processing facilities
- Excess production causing glut
 - Low market prices not enough to meet harvesting, labour & transportation costs
- Wastage after consumption

Status of Post-harvest Losses

Crop	Minimum % Loss	Maximum % Loss
Cereals	3.9 (Sorghum)	6.0 (Wheat)
Pulses	4.3 (Chick Pea)	6.1 (Black Gram)
Oilseeds	2.8 (Cottonseed)	10.1 (Groundnut)
Fruit	5.8 (Sapota)	18.0 (Guava)
Vegetables	6.8 (Cauliflower)	12.4 (Tomato)
Spices	3.9 (Black Pepper)	7.4 (Turmeric)

Livestock

0.8
(Milk)

6.9
(Inland Fish)

Source: ICAR Study, 2010

Need to Reduce Post-harvest Losses

- Application of modern technology to improve the handling systems of horticultural perishables and assure their quality and safety
- Overcoming the socio-economic constraints, such as inadequacies of infrastructure, poor marketing systems, and weak R&D capacity.
- Encouraging consolidation and establish vertical integration among producers and marketers.

6.2 Warehousing & Bulk Handling

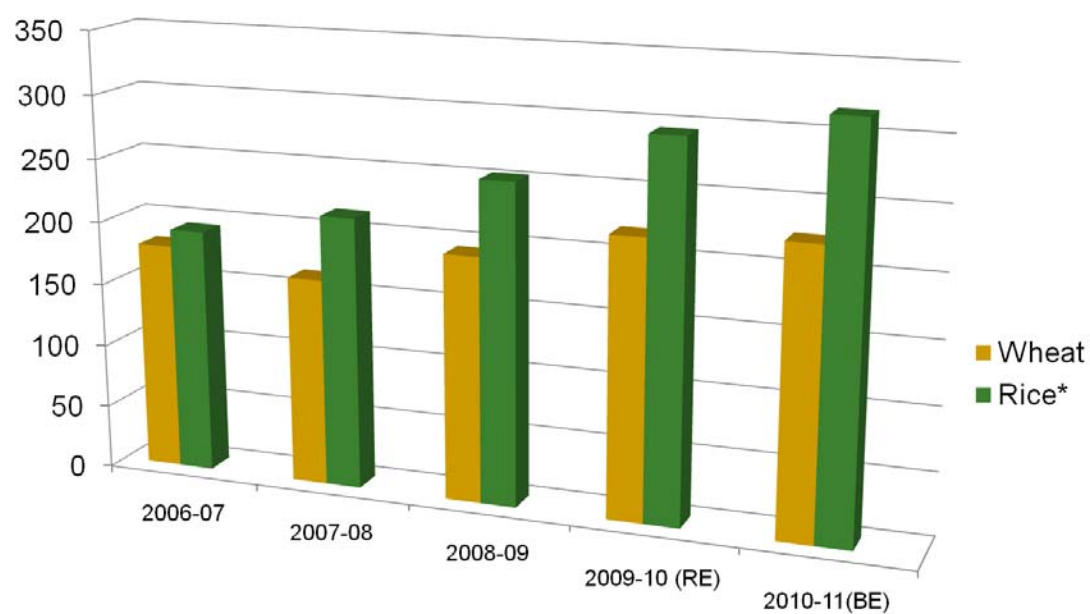
Marketable Surplus and Warehouse Demand

- Total marketable surplus of all major crops
 - 130 million MT
 - Estimated to grow to 150 million MT by end of 12th Plan
- Total storage capacity (including for fertilizer and PDS)
 - Estimated at 108 million MT
- Storage capacity to be created in XII Plan period
 - For FCI (and PDS requirement) - 15 million MT
 - Existing gap for meeting private commercial demand – 10 mil MT
 - New demand in in the next five years - 10 million MT
 - Total warehousing gap - 35 million MT
 - Does not include demand for bulk storage demand including for edible oils

Status of Agriculture Warehousing Capacity

	Capacity (in million MT)
FCI	32.05
CWC	10.07
SWCs	21.29
State Civil Supplies Corporations/ Deptts.	11.30
Total Public Sector	64.30
Cooperative Sector	15.07
Private Sector	18.97
Total	108.75

Cost of Procurement & Storage (Rs /MT)



Rice -@ Rs 316.81 per MT (2010-11 BE) amounts to 15.5% of the economic cost
Wheat - @ Rs 224.99 per MT amounts to 14.5 % of the economic cost

The Approach for XII Plan

12th Plan must plan for a new and modern Scientific Warehousing system backed by a well functioning Warehousing Receipts System to create a new paradigm of how commodities are

- ☐ Stored
- ☐ Graded
- ☐ Processed
- ☐ Financed
- ☐ Traded

Recommendations

1: Target for Capacity Creation: Create min 35 m MTs of additional storage capacity during 12th Plan

2: FCI 10 Year Guarantee Scheme

- Keeping in view the need as well as the proposed incentives for private capacity creation, the Group recommends that the FCI would need to create 12 million MT capacity in the 12th Plan
- Of the above, 2 million MT capacity creation is proposed for silo storage

3: Extend & enhance Subsidy under Grameen Bhandaran Yojana

- Subsidy to be enhanced to 50% against present 33.33% in respect of NE States & hill areas, women farmers, their SHGs/Cooperatives, SC/ST farmers, their SHGs, cooperatives
- subject to a maximum subsidy ceiling of Rs.6 crore
- Subsidy to be enhanced to 40% instead of present 25% in respect of all categories of farmers (other than women farmers), Agricultural Graduates, Cooperatives, CWC/SWCs
- subject to a maximum subsidy ceiling of Rs.6 crore
- Subsidy to be enhanced to 25% instead of present 15% in respect of all other categories of individual, Companies & Corporations
- subject to a maximum subsidy ceiling of Rs.3.75 crore
- Self financing option may be allowed to Private sector/CWC/SWCs/APMCs, etc.

4: Revisions to to Grameen Bhandaran Yojana

- Cost Norm to be revised
- Godowns up to 1,000 MT: @ Rs.3500/MT
- Above 1,000 MT: @ Rs.3000/MT
- NE States/Hilly Areas: @ Rs.4000/MT
- Capacity restriction to be relaxed
- Admissible capacity may be made 50,000 MT
- Lock in Period may be reduced to 2 years instead of present 5 years.

5: Income Tax Incentives: Incentivize private sector to invest through attractive long term lease options & tax sops

- Present incentive under Section 35 AD of the Income Tax Act inadequate
- Only provides deferral of tax and no tax relief
- Though warehousing declared infrastructure no amendment made to Income Tax Act
- Necessary notification needs to be issued by Finance Ministry so as to be eligible for all benefits available for infrastructure projects.

6: Loans: Extend Pledge loan and negotiable Warehouse Receipt facility at liberal interest rates

- Loans for construction of warehouses for agri commodities to be considered as priority sector lending eligible for subsidised interest rate.
- NABARD should also start a special window for long term concessional loans
- The facility of loan to farmers on pledge of Negotiable Warehouse Receipts at 7% rate of interest at par with crop loan.

7 Land

- Land being a vital component for warehousing and with increasing cost and reduced availability of land, State Governments may acquire land and establish Agriculture Economic Zones and make land available on lease basis for warehousing and other allied activities.
- State Governments may make land available in Regulated Markets on lease for setting up of Warehouse.
- Regulatory approvals, such as land conversion to be made automatic

- Warehouses may be declared as mandis

8: Role of Private Sector

- Paradigm shift needed in procurement and storage Policy
- Role of Private Sector limited due to high procurement by FCI/State Agencies

GOI/State procurement

- 25 out of 45 million MT of Marketed Surplus in Wheat
- 35 out of 65 million MT of Marketed Surplus in Rice
- Government's role in grain markets should be reduced

9: Private Sector Outsourcing - Achieve cost efficiency by outsourcing procurement, storage and distribution of food grains.

- The present FCI 10 Year Guarantee Scheme takes the entire investment risk on to GOI/FCI without any significant private sector efficiencies
- GOI is needlessly committing to make payments irrespective of utilization
- If the entire package of services, including procurement, storage and preservations is outsourced then Private sector can be held accountable for both quantity and quality
- Will generate huge cost efficiencies, especially critical in the context of an ambitious Food Security bill

10: Incentivizing the Private Sector

- The subsidy scheme administered by NABARD should not have a cap, and get linked to capacity creation.
- State Governments should facilitate permissions for warehouse construction E.g. easy land conversion and regulatory approvals.

11: Bulk Storage Policy

- Fix target of 5 million MT
- CWC may be incentivized to build 2 million MT with the remaining investment coming from the private sector

- Guarantee scheme as in the BOO project is too costly for replication and should not be expanded
- Bulk containers must be designed to support two way movement.
- Current design needs review

12: Incentives for Bulk Storage

- Organized retail/roller flour mills/large poultry units/ large export houses could be good candidates for investing in silos.
- Incentivize not just silo investment but also investments in testing, handling and transportation in bulk
- Special package of incentives including viability gap funding and one time capital subsidy would be more cost effective than the Guarantee scheme
- Unit cost to be fixed at Rs. 5000/MT against Rs. 3000/MT for conventional storage
- State Governments should declare silo complexes as deemed mandis and exempt such complexes from mandi cess and arthia commission

13 Warehouse and Silo may be treated as virtual markets to avoid double transportation

14 Agri-marketing Information system like AGMARKNET and NHB to be made more user friendly

15 Agricultural markets and related infrastructure including private markets, warehouse and cold chain to be considered as 'Infrastructure Projects' for concessional credit

16 Extending Status of Warehouse to Cold Storages / CA Storages under the of scheme of warehousing Receipt System even for horticulture Produce of long duration storage such as potato, onion, apples etc

17 Organized logistic players, processors and retailers are to be encouraged to develop markets in PPP mode

CHAPTER 7

Secondary Agriculture

7.1 Biomass Utilization

Biomass and its significance

- The plants fix solar energy through the process of photosynthesis to produce biomass. This biomass passes through various cycles producing different forms of energy sources. For example, fodder for animals that in turn produce dung, agricultural waste for cooking.
- Biomass is by far the largest energy provider contributing a total of 1,150 million tons of oil equivalent (Mtoe) which translates to a 79% share of the total energy supply sourced out from these renewable sources.
- In terms of final energy consumption worldwide, biomass ranks fourth with a 10% share after the non-renewable fossil fuels such as oil with 34%, coal with 26%, and natural gas with 22%

Biomass and energy

- Biomass refers to organic materials, either plant or animal, which undergoes the process of combustion or conversion to generate energy. Currently, the largest source of biomass is wood. However, biomass energy may also be generated from agricultural residues, animal and human wastes, charcoal, and other derived fuels.

- Biomass may be used either directly or indirectly. Direct use, more often termed as the traditional use of biomass, primarily involves the process of combustion. The energy that is generated is usually utilised for cooking, space heating, and industrial processes. Indirect use or the modern use concerns the more advanced processes of converting biomass into secondary energy. This includes gasification and electricity generation.

Importance of biomass utilization

- Subsistence, income and employment in rural areas.
- Food and protein,
- Urban employment,
- Investment opportunities
- Reduction in pollution like crop residue/stubble burning in Punjab/Haryana
- Wealth out of waste- neem seed collection for biopesticides
- Foreign exchange
- Value sharing with poor

Economic, environmental and social significance of biomass

Aspects of biomass resources

- End products of production or consumption which has not been used, recycled or salvaged
- They can be in solid, slurry or liquid form
- Their economic value is often less than the cost of their collection (production is scattered) and transformation for use, and thus are discharged as waste
- But, they have useful feed, food, pharmaceutical, nutraceutical, cosmetics, pesticidal and energy value

Biomass in India

- Biomass today provides some 10 percent of global primary energy.
- Biomass contributes over a third of primary energy in India. Biomass fuels are predominantly used in rural households for cooking and water heating, as well as by traditional and artisan industries.
- Biomass delivers most energy for the domestic use (rural - 90% and urban - 40%) in India. Wood fuels contribute 56 percent of total biomass energy.

- Consumption of wood has grown annually at 2 percent rate over past two decades.

Estimates of supply and demand

- Supply-side estimates of biomass energy are reported as: fuelwood for domestic sector- 218.5 million tons (dry), and cattle dung cake- 37 million tons. 120-150 million MT per annum of agricultural and forestry residues corresponding to a potential of 16,000 MW.
- Estimated demand in India for fuelwood was 201 million tons in mid 1990s
- The total availability of offal/bones in the country generated from large slaughterhouses is estimated to be more than 21-lakh tonnes/annum. Besides other uses, it can also be used for the preparation of animal feeds.

The following tables give a rough idea of the biomass availability in India.

Type of biomass	Total in MTs	Present Availability in MTs
FYM	500	100
Crop residues	300	100
Rural compost	285	134
City refuse	15	1.5
Biogas slurry	28	7
Biofertiliser	0.01	
Green manure	2.2 million hac	
Total		362 + 20 lakh hacs

Table 1: production of some major plant and animal based foods, feed and fibre and fuel commodities in India

Commodity	Production in MTs	remarks
Cereals	195	Out of total biomass production , the used constituents are 10-40% and the rest are crop/animal residue and by byproducts.
Pulses	15	
Oilseeds	25	
Fruits	50	
Vegetables	100	
Sugarcane	250	
Milk	91	
Meat	6	
Cotton	4	
Fish	8	

Source: Ali, 2007.

Table: 2 Potential biomass in India

Source: Bhattacharya, 2005 (from Singh, 2010).

Major biomass resources in India

a. Wheat/rice/maize/cotton/soya/Horti based products

- Wheat Straw, Wheat Husk, Wheat germ for wheat germ oil, Wheat bran
- Rice Straw, Rice Husk, Rice bran
- Corn Stover, Corn by products like germ residue, corn gluten feed and meal
- Adhesives, Cosmetics, Glycerine
- Polymers, Animal feed
- Briquettes, Bio-coal
- Composting and bio-inputs like manure, vermicompost, biopesticides
- Soya pulp or okra- by product of soya milk
- Soya meal- by product of oil refining
- Soy lecithin- by product of soya oil refining
- Horti. By products: Mango butter from mango kernal (guthli); Peels for vitamins; Grape seed oil, banana fibre and banana peel (India produces 27% of world's banana)

b. Plantation crop based biomass

- Cocoa-pod husk and bean waste
- Coconut- see photos in Appendix
- Rubber- rubber seed meal
- Biomass and animal feeds: in case of cocoa pod husk, mango seed kernel, rubber seed meal and sal seed, they can form 20-40% of feed for bullocks, calves, sheep, pigs and poultry

c. Meat industry byproducts

- Offal/bones
- Hides
- Poultry and fish feed
- Animal rendering for microorganisms
- Bio-inputs

- bone meal, bone charcoal, and fertilizer materials from such wastes
- Bioenergy
- In India Open Kettle rendering is followed, which is less efficient.
- mobile plants, which may be more suitable to India's requirement, as we have low capacity slaughterhouses scattered in different places.
- Currently the vast gap between demand and supply of intermediate products like MBM, DCP, BCP etc. is being met by use of substitutes like Soya meal, Meat meal and Fishmeal.
- There is a vast potential for setting up slaughterhouse waste processing plants for manufacture of MBM/BCP as feed supplement.

Positive aspects of biomass promotion

- Since biomass production is labour intensive, feedstock production could be an important source of both primary employment and supplemental income in rural areas.
- Many farmers could sell farm residues or even purpose-grown wood. Biomass production can be a new source of revenue.
- Indirectly, other rural enterprises can benefit from biomass feedstock production activity especially providers of agricultural inputs such as fertilizer, suppliers of farm equipment, transporters and marketers of goods.
- Employment is also generated in processing biomass and working at the bioenergy conversion facility.
- The woodfuel trade is the largest source of employment (3–4 million) in the energy sector
- Wastelands and degraded forests, which could be utilised for growing biomass
- Increased employment in farm-activities of bioenergy development such as raising of biofuel crops, seed collection, briquetting and transportation of biomass, etc.
- Introduction of biopower, biogas and other clean fuels will drastically reduce health problems resulting in increased life expectancy and decreased infant mortality
- compressing the biomass to form briquettes which not only occupy lesser space but also are more efficient

- conversion of organic matter into biogas through anaerobic digestion which apart from meeting fuel needs also gives digested manure for farms

Negative aspects of biomass promotion

- Involvement in ethanol requires accessibility to irrigated land, which small farmers may not be able to spare due to their needs of other crops.
- Further, initial investments in both biodiesel and ethanol programmes are large, which such farmers may not be able to afford.
- The potential distribution of waste, marginal and pasture lands to corporate and bigger farmers will have adverse effect on the rural poor community as it could lead to highly mechanized production process and less job opportunities.
- Comparing Jatropha cultivation with Sugarcane cultivation, farmers may not find the former remunerative enough. For instance, in India, sugarcane plantations yield 70 ton per hectare and fetch the farmer Rs.70,000 per hectare at a sugarcane price of Rs.1,000 per ton. In comparison, with Jatropha plantation farmer gets Rs.5,000 per ton of oilseeds and if the yield is 3.75 ton per hectare, his income is only Rs.18,750 per hectare (UNCTAD, 2006).
- For production of ethanol, Sugar beet has advantages over sugarcane as it provides higher yield (12.5 to 17.5 ton per hectare of sugar against 7.5 to 12 ton of sugar per hectare from sugarcane). In addition, it requires lesser water and power for crushing and shorter maturity time.

Impacts of biomass utilisation

Major impacts of biomass utilisation include:

- agricultural markets,
- prices,
- land availability for food and food security

Further, the impact can be at three levels

- Individual enterprise or person level
- Community level
- National level

Biomass utilisation promotion policies

Biomass policies followed a multi-pronged strategy:

- i) improving efficiency of the traditional biomass use (e.g. improved cook-stove programme),
- ii) improving the supply of biomass (e.g. social forestry, wasteland development),
- iii) technologies for improving the quality of biomass use (e.g. biogas, improved cook-stoves),
- iv) introduction of biomass based technologies (wood gasifiers for irrigation, biomass electricity generation) to deliver services provided by conventional energy sources, and
- v) establishing institutional support for programme formulation and implementation. The institutional response resulted in establishment of
- DNES (Department of Non-Conventional Energy Sources) in 1982 and state level nodal energy agencies during the early 1980s decade.

The policy shift of the 1990s was characterized by:

- i) higher emphasis on market based instruments compared to regulatory controls,
- ii) reorientation from technology push to market pull, and
- iii) enhanced role of private sector.
- Elevation of DNES in 1992 to a full fledged ministry, MNES (Ministry of Non-Conventional Energy Sources)

Gap analysis

- Unfortunately, much of the meat industry is in the unorganized sector which creates unhygienic conditions, pollution, let aside the loss of revenues for the Government and lack of development of secondary animal byproduct industries.
- With millions of animals dying each year through natural cause and the waste from slaughterhouses, if processed properly it can create large industries for much needed bio-resource as agricultural inputs.
- For value addition, the knowledge base is very poor and some times outdated
- Fruit peel content also varies from 5-50%. Depending on the area of production, quantities generated are also related. The peel undergoes rapid changes in quality and requires suitable care immediately after fruit processing; to take for the generation of secondary value added products.

They can be used for production of the range of secondary products such as pectin, mucilage, gums, anthocyanins, carotenoids, antioxidants, antimicrobials, and insecticides, fermented products or as supplementary processed products, in food formulations.

- However, the main limitation is actual quantity that is practically available, its processing, and final yield (its quality) that eventually decides the economic feasibility of the process. Oil from citrus and pectin from fruit peels, are classic examples.
- Fruit peels are considered as the best source for a spectrum of compounds such as polyphenols, flavanoids, tannins, catechins, vitamins such as C, E, beta-carotene etc. The World demand for such nutraceuticals is estimated to be in excess of one billion \$. Further research may be carried out at Indian Institutes to reduce the cost of processing.

Examples of biomass utilization promotion

Biodiesel production

- Under the bio diesel programmes, employment will be generated in preparation of land and plantation, nurseries development, seed collection, oil extraction centres, transesterification plants, blending and marketing, etc.
- Of this, the plantation and seed collection are labour intensive and the most dominant item of the expenditure generating job opportunities in rural areas. Some of the estimates of employment created by value added chain of biodiesel are as follows (Planning Commission, 2003):
- One hectare of plantation will generate employment of 311 person days.
- About 40 person days of labour per hectare is needed for seed collections. Additional employment in value added chain.
- Based upon the above premises, large potential for rural employment in the farm sector will be created.
- In addition, millions of jobs will be created in non-farm activities such as oil extraction plants, biodiesel production units and associated activities.
- The income derived from plantation and seed collection will be additional and may help in reducing poverty (Planning Commission, 2003; UNCTAD, 2006).

Thermal gasification power plant at Sunderbans, West Bengal

- Chhottomollakhali Island in Sunderbans is situated in the district of South 24 Parganas, about 130 km away from Kolkata, having a population of about 28,000. It is difficult to extend grid electricity to this Island due to

prohibitive cost involved in crossing of various rivers and creeks. In the absence of electricity, the economic activities of the Island were suffering and people had a very hard life. Installation of biomass based Gasifier Power Plant (4x125 kW) in June, 2001 has changed the life of the inhabitants of four villages on this remote Island.

- The plant is catering to electricity needs of domestic, commercial and industrial users such as drinking water, hospital, ice factory, etc.
- Employment generated due to energy plantation, used in the biopower plants, is about 100 person days per hectare.

Earth stove by Nishant Bioenergy

- This is a community cooking stove, named as Sanjha Chulha (means combined stove), also known as “Earth Stove,” developed by Nishant Bioenergy and uses agro-waste briquettes as fuel. Many schools and other institutions in India, provide meals for a large number of people and, use Liquefied Petroleum Gas (LPG) for cooking, which is currently subsidised by the Government.
- Use of such type of community biomass stoves would save lot of funds for these institutions as waste briquettes are much cheaper than LPG.
- It will allow use of a sustainable fuel (agro-waste), provide the briquetting industry with a more regular income, and generate income for the small farmers and labourers who will be involved in the supply chain. Estimated social benefits of an Earth Stove for 450 persons are as follows.
- Briquetting plants earn typically 40% more from selling briquettes to schools and similar community kitchens than to industrial users, and have a guaranteed market.
- Production of one tonne of briquettes needs about one day of labour, which is used by six stoves and thus generates one extra full-time job.
- Farmers are paid about Rs.500 per tonne for agriculture waste, and a typical small holding of 2 hectares produces about 5 tonnes of waste per year, which brings in the equivalent of an extra month's income (Rs.2500) to the farmer.
- The government has encouraged users by providing 100% depreciation on the capital cost of the stove.

Case of mango butter in Gujarat

Mango kernels are collected from pulping plants within 24 hours, washed and dried and exported for extracting mango butter which is used in health and beauty products (cosmetics).

Recommendations

The technical advisory committee on secondary agriculture (2008) recommended the following:

- Ministry of Food Processing be renamed as "Ministry of Bio-Processing" to include both food and non-food agro- based industries and this Ministry assume the primary role of coordinating activity with all States *including creation of regional offices of secondary agriculture (ROSA) as well as assuming financial responsibility.*
- For seeking and transferring relevant technologies, and providing training in all aspects of agro-businesses value chain - including marketing and opening new export opportunities for the Indian bioproducts - a new Integrated Bioprocessing Technology Institute (IBTI) needs to be established.
- A minimum of \$2 Billion investment (Secondary Agriculture Innovations Fund, SAIF) by the Government would be necessary to facilitate building Secondary Agriculture Industries across the country during the 11th 5-year plan. This fund should be managed by an autonomous special purpose vehicle (Secondary Agriculture Innovations Fund, Ltd.) with the sole purpose of building innovative Bio-processing Ventures, each operating as a business, under the umbrella of the Ministry of Bio- Processing.
- examples of high value-addition Industries needs to be set up in each sector. The cost of such setups must be borne 50% by the Central Government, 10% by the State and 40% by the new entrepreneur. Such units need to be World-class and internationally competitive, with a single Government interface provided by SAIF.

Sub-group recommendations

- As far as possible, the existing agriculture land should be spared from, and the wastelands should be used for, growing biofuel and biomass crops. Land availability for biofuel crops is a crucial issue globally and to meet 5% blending demand by 2015, almost additional 100 Mha land area is needed across the world.
- Although total land available may be above 100 Mha but all of it can not be developed for biofuel crops . For heat or biopower production, through plants such as biomass gasifiers, focus should be on the use of agricultural waste.
- Govt. agencies assigned the task of plantation on wastelands should work in tandem with local people, NGOs and voluntary groups and create a sense of ownership among them.

- Involvement of women, landless leasee farmers and labourers, marginal and small-scale farmers and other weaker sections of the society is needed
- There is need for Diffusion of Biomass utilization technologies in non-formal industries like
- *Arecanut processing*
- *Jaggery making*
- *Tobacco curing*
- *Silk reeling*
- *Cooking/heating stoves for hotels , bakeries and community halls*
- *Lime/pottery kilns*
- *Brick kilns*
- *drying systems*
- *Processing of various food products including cardamom, cashew, coconut, rice, cocoa*
- *Rubber sheet smoking*
- *Rubber band vulcanization*
- *Ayurvedic medicine preparation*

Meat based Industry

- Legal support mechanism to facilitate the gainful utilization of the culled buffalo and surplus male buffalo.
- Amend outdated laws: A good example of a shortsighted regulation is the restriction on slaughtering animals for production of veal in order to maintain or increase the overall productive population. Such action can cause the market to develop a negative attitude towards slaughtering, which may affect their value at a later date. Such regulations have good intentions but are bound to cause long-term damage. This provision alone is a major impediment in utilizing male buffalo calves for lean meat.
- inclusion of additional Districts under Foot and Mouth Disease Control Programme (FMD-CP) in the XII Five Year Plan.

- Need for consistent and uniform Policy across different States for livestock slaughter for export; Male Buffalo Calf Rearing for meat export and leather production.
- Restoration of DEPB rates for frozen Buffalo meat.

Animal byproducts industry

- Inclusion of meat as an eligible agriculture product in the Vishesh Krishi and Gram Udyog Yojana (Special Agricultural and Village Industry Scheme)
- Restoration of financial assistance for up-gradation of public/municipal slaughter houses/processing plants engaged in export production in APEDA's Financial Assistance Scheme (FAS) (to 1997-2002 FAS level). These facilities must build links with secondary animal products processing industries to capture more value from the same animal and reduce environmental pollution.
- Restoration of financial assistance for up gradation of private slaughter houses/processing plants for export production in APEDA's Financial Assistance Scheme (to better than 1997-2002 FAS level).
- Inclusion of Buffalo meat under APEDA's Transport Assistance Scheme for new markets in Africa / CIS where freight cost from India for refrigerated containers is much higher than from competing countries.
- Meat is an agricultural product and it should be recognized as such to buffer the capacity of farmer for income under stress conditions.
- Various tax incentives and subsidies for agro development should be equally applicable to the meat sector.
- Government needs to take an active role to organize the meat processing industries as it is not only important for the public health and the environment, it is vital for developing secondary industries using this valuable bioresource abundant in India.
- The need for cold storage houses and inspection of slaughterhouses to maintain sanitary condition is vital for the organized development of this industry which is rapidly growing.

Bioenergy promotion

Short-term Policies (1 to 5 years) could be:

- i) enhanced utilization of crop residues and wood waste,

- li) information dissemination,
- iii) niche applications (e.g. remote and biomass rich locations),
- Iv) technology transfer (e.g. high pressure boiler),
- v) co-ordination among institutions,
- vi) demonstration projects,
- vii) participation of private sector, community and NGOs,
- viii) waste land development, and
- ix) subsidy to biomass technologies to balance the implicit subsidies to fossil fuels.

Medium Term (5 to 20 years):

- i) R&D of conversion technologies,
- ii) species research to match agroclimatic conditions,
- iii) biomass Plantation,
- iv) scale economy based technologies,
- v) Local Institutional Developments, and
- vi) removal of distortions in fossil energy tariffs.

Long term (over 20 years):

- i) Infrastructure (logistics, T&D),
- ii) ii) multiple biomass energy products (e.g. gas, liquid, electricity),
- iii) iii) institutions and policies for competitive biomass energy service market, and
- iv) iv) land supply for biomass generation

7.2 Residue Utilization

Importance of Residue Utilization

- Bye products from agro processing can be a base for value addition and an important source of revenue generation
- Sugar mills can be converted into virtual bio-refinery by processing downstream products like ethanol, potable alcohol, citric acid etc and utilizing baggasse to generate power or produce paper
- Rice bran oil is a healthier oil and rice husk, bran and even straw can be converted into food and fibre.
- The bye-products from slaughter houses like blood and bones can be processed into high value medicinal and other products

7.5 Importance of Alternate Crops – Stevia

- New crops can be tried as alternate to traditional cultivation
- Stevia, a zero calorie natural sweetener is emerging as a healthier substitute to sugar
 - It is 200-300 times sweeter than sugar
 - Uses 1/7th quantity of water for the same cropping area
 - Good for diabetics (india has 52million diabetics)
 - Now approved in US, Japan, Europe and many other countries as a food ingredient

Stevia Cultivation in China

- More than 50,000 ha under Stevia cultivation in China
- Farmers reportedly getting 2 to 3 times more revenue than traditional crops
- Govt. buying Stevia extracts of 1.5 mln tons of sugar equivalent as buffer stock
- Promote Stevia as a substitute for sugar as it is eco-friendly, uses less water and is a healthier alternative
- Support cultivation and marketing of organic products both within and outside the country

7.4 Medicinal & Aromatic Plants

According to estimates the global market of traditional therapy was US \$ 60 billion in 2002 and is growing steadily. Further, the global market for medicinal herbs and herbal products is estimated to touch US \$ 5 trillion by 2050. According to the report of the World Health Organization (WHO), over 80% of the world population relies on traditional systems of medicines for their primary health care. **China and India are the World's leading exporters of medicinal & aromatic plant based drugs. India has a huge comparative advantage in the medicinal plants sector over other countries given that it is one of the 17 mega bio-diversity rich countries and is home to 7% of the world's bio-diversity. There are 15 agro-climatic zones, 45,000 different plant species out of which approximately 15,000 are medicinal plants. About 6000-7000 plants are used in Indian Systems of Medicine, 960 of these have been recorded in trade and 178 are traded in high volumes in quantities exceeding 100 MT per year.**

We have medicinal plants from Himalayan region to marine ecosystems and from deserts to rain forests. Most MAPs are collected from forests or wild sources but with increasing abiotic and biotic pressures on natural habitats a number of species are becoming endangered or threatened. As a result, it is getting increasingly difficult to meet the demand for MAPs sustainably from natural sources.

Further MAPs are linked with livelihoods of the poorest of the poor in the country like dwellers in and around forests and even farmers who would like to take to alternative crops. In this scenario it becomes imperative that we draw up strategic long term plans to not only conserve and protect this wealth *in-situ* but also promote *ex-situ* cultivation outside the natural habitats.

After detailed discussions the Sub-group has made the following recommendations:

1. Medicinal Plants to be treated as Agricultural Produce

There is need to encourage cultivation of the medicinal plants as the sustained availability of medicinal plants from the wild has certain limitations. Currently MAPs whether cultivated or collected from the wild are not categorised

as “agricultural produce” but as “forest produce” even though a number of species are being cultivated on farmlands. The cultivator has to register his “crop” with the Forest department and the latter after inspection of the crop issues a certificate of cultivation (CoC) and later a transit pass for transportation of the produce which gets checked and stamped at every forest check post. These are time taking procedures and create unnecessary hurdles for farmers who are also liable to pay sales tax on the produce. Giving it the status of agricultural Produce would help the marketing of MAPs

2. Minimum Support Price (MSP) to Medicinal Plants

Minimum Support Price for the medicinal plants is important for preventing exploitation of farmers at the hands of traders and other middlemen. Ministry of Panchayati Raj had constituted a Committee on ownership, price fixing, value addition and marketing of minor forest produce under the Chairmanship of Shri T. Haque, Member, Planning Commission. The Committee has submitted its report in May, 2011. The Committee has recommended for MSP for minor forest produce as follows :

The minimum support price should be fixed at the national level by a specially constituted Central Price Fixation Commission, comprising one chairperson who will be an expert in the field of tribal and rural development and three other members having experience in the relevant field. The broad functions of the Commission would be the following:-

- i. Fixation of minimum support price as bench-mark and setting quality standards.
- ii. Formulation of broad guidelines for effective implementation of the MSP scheme.
- iii. Monitoring and evaluation of the aforementioned scheme; suggesting corrective measures from time to time.

While fixing MSP for each crop season, the Commission shall have in depth consultation

with the Ministry of Tribal Affairs, Ministry of Panchayati Raj, Ministry of Environment & Forests, Department of AYUSH, tribal leaders from all the

concerned regions, representatives of national level merchant/trade and industry associations dealing with MFPs, state level agencies and the TRIFED. The administrative ministry for the Commission will be the Ministry of Tribal Affairs

Calculation of MSP

While the Commission would develop appropriate methods for calculation of MSP for selected MFPs, some important factors to be considered are (i) labour time used in the collection, (ii) the prevailing wage rate, (iii) transportation cost, if any (iv) market prices and (v) demand – supply analysis. Under no circumstances, the gatherers of MFP should be paid less than the existing minimum wages under the MGNREGA or minimum wages in agriculture sector, whichever is higher.

The MSP operation in the tribal areas should be seen as an anti-poverty measure, as it addresses the livelihood of the poorest people in the country

Similarly, for the cultivated medicinal plants also there is a need to have MSP to protect the farmers from the exploitation from the traders and market fluctuation and a similar mechanism for deciding minimum support price. In fact MSP for the species common to cultivation and collection should be the same.

3. The Support of Medicinal Plants through Infrastructure of Ministry of Agriculture

Over a period of time, Ministry of Agriculture has developed a network of infrastructure for extension, providing inputs to the farmers, research and marketing of agricultural produce. It is proposed that the same infrastructure may also be used by the medicinal plants sector for providing inputs and extension, marketing and research support like Indian Council of Agricultural Research (ICAR), Krishi Vigyan Kendras (KVKs), Agricultural & Processed Food Produce Export Development Authority (APEDA), Agricultural Market Information Network (AGMARKNET), Department of Agriculture & Cooperation. Agricultural Universities etc should extend full support to medicinal plants sector.

4. Market Channels and Market Information Services

Market Information Services and Market Information Services are characterised by lack of domain information on techniques and commercial

opportunities, absence of Resource Centers with a regional MAP crop focus and no access to international markets

Currently marketing of MAPs happens through Mandis & commodity boards, Agricultural produce marketing committees etc. There are numerous intermediaries.

The following steps are suggested in order to fill this gap:

- Promotion and information dissemination through IT dedicated mechanisms for procurement of MAPs should be built along with a Minimum Support Price.
- networked Agri Mandis for MAPs
- Database of Cultivators and growing CoOps Success stories of Contract Farming with Incentives like other Agri crops
- Contract Extractions (PHM)
- Speciality Warehousing & Supply Chain development
- Integration of all Portal with techno commercial information
- Creating an on line MAPs Trade Exchange
- Integration with Krishak Call Centres, KVKs etc

There are examples from states like Uttarakhand where the State Forest Development Corporation have started both fixed and floating mandis which procure MAPs from the doorstep of gatherers thus eliminating middlemen entirely and also ensuring remunerative prices. Such efforts could be replicated in other states too.

5. Develop a Database of availability, cultivation, price, demand and supply for MAPs

Production and trade statistics are not updated regularly, HS Codes for a large number of MAPs are not available which are being covered under N.E.S.(*Not Exactly Specified*) at present leading to a lot of ambiguity in export/import figures of MAPs. Hence it is suggested that a mechanism for transparent market information of demand and supply, integrating/linking various markets and making the data network easily accessible for pricing should be

developed. This will also help to re-evaluate government policies and schemes and to take appropriate measures to streamline and encourage the marketing of MAPs.

6. Amendment of Prohibited List

29 plants are in the “prohibited list”(out of which 16 are MAPs) and have the following additional requirements:

- Registration of Trader(Buyer) with the Forest department for procuring cultivated raw material
- Trader(Buyer) has to apply for Legal Procurement Certificate(LPC) with Forest Department for exporting cultivated raw material
- Inspection of raw material and sealing of sacks has to be done in the presence of Forest Department Staff
- Levy of royalty by the forest department

The prohibited list itself needs to be amended considering the fact that many of these species are no longer available in the wild but are being cultivated. By placing MAPs in the category of Agricultural produce in addition to streamlining the above procedures cultivators will get exempted from Income Tax and traders will get exempted from Sales Tax/VAT.

7. Strengthen Infrastructure

MAPS are facing the problem of inadequate warehouses and cold storages facilities; lack of post harvest machines required for drying, grading, powdering and packaging; Lack of specific kind of vans (containers, refrigerated vans etc.) for transportation of planting material; Lack of transportation facilities in remote areas cultivating MAPs; Lack of auction centers for cultivated and wild MAPs for local collectors and cultivators; Lack of Laboratories for testing and analysis of raw material etc. Infrastructure already created under National Horticulture Mission, National Horticulture Board and other Agricultural

Departments/Agencies should be made available to medicinal plants cultivators and collectors.

8. Capacity Building

Farmers and collectors need comprehensive training on all aspects of MAPs. The sector itself needs persons trained in all aspects of medicinal plants e.g. taxonomy, cultivation, conservation, processing, post harvest management, certification trade both domestic and international, biodiversity, TK related uses, protection of IPRs, HS codes, international agreements and treaties like CITES, Nagoya Protocol etc. Besides we need to have an institutional mechanism to impart training for the implementing agencies of NMPB schemes and design courses for training, undertake state of art research and act as a referral centre for all dimensions of medicinal plants.

Recommendations for Secondary Agriculture

- Enhanced utilization of crop residues and wood waste
- Information dissemination
- Niche applications (e.g. remote and biomass rich locations)
- Technology transfer (e.g. high pressure boiler)
- Co-ordination among institutions
- Demonstration projects
- Participation of private sector, community and NGOs
- Waste land development
- Subsidy to biomass technologies to balance the implicit subsidies to fossil fuels.
- Encourage by-product utilisation and value addition from crop residues
- Subsidise products such as ethanol, bio-diesel and rice bran oil to enhance farm incomes and minimize costly imports

CHAPTER 8

Trade Policy

8.1 Barriers to Internal Trade

- Although our constitution guarantees that “trade, commerce and intercourse throughout the territory of India shall be free” (Art 301), a number of laws and administrative bottlenecks inhibit free movement of goods
- The Essential Commodities Act and rules made thereunder impose restrictions on storage, trade and transportation of many agricultural products
- State & local taxes like VAT, Entry Tax, LADT and Octroi also create hurdles
- The collection of Market fees by APMCs create intra-state trade barriers, as well as restricting inter-state trade

Recommendations

- The National Commission on farmers has argued for abolition of all indirect taxes on primary agricultural products
- The working Group recommends:
 - The EC Act should be revisited and if considered necessary, should be kept on the statute books only for emergency use
 - State and local taxes on agricultural commodities should be rationalized and made uniform
 - Market fees should not be imposed as a levy on all agricultural produce from a geographical area, but APMCs should only levy a service charge for use of the market infrastructure
 - No market fee should be levied on perishable commodities like fruits, vegetables and milk

8.2 Infrastructure & Policy support for External Trade

I. Status of Existing Export of Agriculture Commodities vs Potential

Competition in the World Market

Leading agricultural exporters in the Asia-Pacific

Exports of food staples are dominated by a very small group of countries described as “natural exporters” such as Canada, New Zealand, Uruguay and the U.S. In these countries, favorable geographical conditions, sparse population and a history of colonization have resulted in large scale and extensive agriculture that delivers substantial surpluses of food staples. The only exception to these conditions among global exporters of staples is Europe, where, as widely recognized, state support to farmers has been responsible for the exportable surpluses. Only a few developing countries figure among the group of natural exporters, which are significant exporters of grains and animal products. They are Thailand (rice and poultry), Vietnam (rice), Argentina (wheat, feed grains, soybeans, beef and milk powder), Brazil (soybeans, beef and poultry) and Uruguay (beef).

If we consider the set of countries from the Asia-Pacific which account for 1% each of world exports, these include:

Country	Market share (%)
China	3.3
Australia	2.4
Thailand	2.2
Malaysia	1.6
Indonesia	1.5
New Zealand	1.4
India	1.4

Changing Profile of Commodities Traded

It is indeed true that over time developing countries have been adjusting their export profiles depending on trends in global trade. As prices of tropical products have tended to decline, the middle-

income developing countries have shifted away from tropical beverages and raw materials – including coffee, tea, cocoa, sugar, cotton and tobacco. The share of these products as a percentage of total agricultural exports for these countries has fallen – from 55% in the 1960s to 30% by 2000. Better returns can be obtained by exporting high value food products – vegetables, fish, meat, nuts and spices. Therefore, the share of these products in exports is increasing. However, the financial and technology demands of switching over to higher value food crops are also high.

Approximate share of world production of selected agricultural products traded internationally is:

Product	%age share traded
Coffee	80
Tea	40
Cotton	30
Soybeans	30
Sugar	30
Bananas	20
Wheat	17
Feed grains	11
Rice	6

2 Share of Agri. Exports vs Total Exports from India

Export Trend (Value:Rs crore)	2007-08	2008-09	2009-10
Total Merchandise Export	640172	840755	845125
Export of all Agri Products	64711	77777	74638
Export of products monitored by APEDA	28906	34450	34687
Share of Agri Export in Merchandise Export	10.1	9.3	8.8
Share of APEDA in Agri Export	44.67	44.29	46.47

Sources: DGCI&S

3 Export of Agriculture Products from India:

Commodity	1999-2000	2004-2005	2009-2010
A) PLANTATION	3,219.52	2,909.38	4,975.59
01) Tea	1,784.67	1,840.30	2,943.53
02) Coffee	1,434.85	1,069.08	2,032.06
B) AGRI & ALLIED PRDTS	15,880.01	28,276.93	59,723.66
01) Cereal	3,135.84	9,022.57	14,228.15
a) Rice	3,125.92	6,768.92	11,254.90
b) Wheat	0	1,459.82	0.05
c) Others	9.91	793.83	2,973.19
02) Pulses	419.56	602.57	407.35
03) Tobacco	1,008.92	1,254.61	4,344.40
a) Unmanufactured	812.04	940.07	3,621.44
b) Manufactured	196.88	314.54	722.96
04) Spices	1,767.43	1,883.18	6,157.33
05) Nuts & Seeds	3,206.17	3,809.84	5,773.46
a) Cashew incl CSNL	2,460.68	2,489.12	2,829.20
b) Sesame & Niger seed	373.73	773.69	1,518.33
c) Ground nut	371.76	547.02	1,425.93
06) Oil Meals	1,637.86	3,177.60	7,831.79
07) Guergum Meal	814.77	689.48	1,133.31
08) Castor Oil	1,067.40	1,077.98	2,179.28
09) Shellac	78.08	164.87	71.3
10) Sugar & Mollasses	40.26	155.05	129.99
11) Processed Foods	1,575.69	3,430.94	9,362.79
a) Fresh Fruits & Vegetables	642.91	1,725.25	5,210.80
b) Fruits/Vgetable seeds	79.5	66.04	145.08
c) Processed & misc processed items	853.29	1,639.65	4,006.91
12) Meat & Preparations	819.43	1,905.27	6,286.10
13) Poultry & Dairy Products	121.51	740.75	915.47
14) Flouriculture Products	116.72	222.92	294.46
15) Spirit & Beverages	70.38	139.31	608.48
C) MARINE PRODUCTS	5,124.56	6,469.22	9,899.98

4 Export Growth of Products monitored by APEDA

S.No	Product Group	1995-96		2003-2004		2009-2010	
		Quantity(MT)	Value (Rs lac)	Quantity(MT)	Value (Rs lac)	Quantity(MT)	Value (Rs lac)
1	Floriculture	----	6014.15	30665.14	24960.48	26814.52	29446.36
2	Fruit & Vegetable Seeds	9446.52	4308.31	5172.83	5367.55	8883.86	14507.51
3	Fresh Grapes	22414.03	5475.97	26783.83	10588.81	131153.61	54533.89
4	Fresh Mangoes	22269.17	3851.92	60551.32	11051.90	74460.61	20053.98
5	Walnuts	6925.74	8240.39	6417.98	10143.24	9073.38	19789.51
6	Other Fresh Fruits	58095.21	5427.92	149294.26	17126.55	260675.43	52283.32
7	Fresh Onions	350989.17	23072.12	859938.75	71586.73	1664922.39	231942.98
8	Other Fresh Vegetables	83411.74	7047.28	188320.82	25228.48	419241.35	73185.90
9	Pulses	40409.00	8886.63	140786.37	29706.73	100130.94	40832.47
10	Pickles and Chutneys	15597.26	5255.18	-----	-----	-----	-----
11	Mango Pulp	36023.33	8461.28	89514.84	24198.57	186197.85	74460.77
12	Other Processed Fruits and Vegetables	37821.02	10676.97	129122.99	36332.89	398012.35	143564.28
13	Dried & Preserved Vegetables	63658.95	15879.15	70373.72	22342.56	124613.50	53207.48
14	Dairy products	4190.75	2627.07	8918.38	8710.16	34379.97	40268.39
15	Natural Honey	521.29	629.89	6964.30	6808.94	13310.77	14665.42
16	Poultry products	10067.42	2621.33	415228.17	20239.82	1016873.10	37211.85
17	Buffalo Meat	159703.91	55500.33	343817.08	153677.16	495119.71	548160.25
18	Sheep/Goat Meat	8612.80	5642.54	16820.53	11038.56	52868.01	74720.07
19	Animal Casings	325.14	830.00	732.84	1243.09	2020.56	3152.74
20	Processed Meat	476.64	407.13	986.13	763.08	716.19	958.51
21	Swine Meat	-----	-----	-----	-----	1117.96	1034.90
22	Groundnuts	118908.00	23068.58	176109.32	54430.45	340246.31	142593.40
23	Guar Gum	83283.40	22720.25	120561.27	50789.55	218459.74	113324.66
24	Alcoholic & Non Alcoholic Beverages	14214.20	4384.29	357.90	185.62	70504.99	58952.65
25	Cocoa products	952.78	884.84	1688.37	1614.58	5863.88	9699.45
26	Cereal	47561.90	10386.52	46275.35	24170.75	168795.50	101353.72

	Preparations						
27	Jaggery and Confectionary	245851.75	15395.64	295013.25	33148.23	53639.76	23320.18
28	Non Basmati Rice	4540615.00	371733.37	2640438.93	217479.76	139540.76	36529.61
29	Basmati Rice	373314.00	85066.86	771475.37	199304.57	2018679.35	1089743.81
30	Wheat	632468.00	36676.23	4093080.52	239115.26	47.30	5.59
31	Other Cereals	28097.00	1696.93	604222.66	39754.54	2924468.29	297309.00
32	Milled Products	468827.00	33196.29	545755.39	35595.30	60284.18	13218.20
33	Miscellaneous Preparations	27730.99	7160.76	916.42	448.40	158803.56	69429.28
	Total	7512783.15	793225.72	11846305.03	1387152.31	11179829.68	3483460.03

Export Potential

India's Export Interest in Agricultural Products (Source: Report prepared by UNCTAD India Project)

To arrive at India's export interest in agricultural products the analysis has been undertaken at HS six digit codes. Most of the studies use only trade data to arrive at the tariff lines of export interest; however, we use trade data as well as production data to arrive at agriculture tariff lines of India's export interest. Using production data makes it possible to assess export interest in even those agricultural products which India is not able to export either due to high tariffs in other countries or due to non-tariff barriers. The criteria used include India's price and export competitiveness in the product; demand for the product; as well as the supply capacity of the country.

The following steps are used to arrive at India's Export Interest in Agriculture for HS 6-digit tariff lines:

1. India's average share in world production in the period 2005-07 is estimated for the agricultural tariff lines for which the data is available. These are 96 products. The data is extracted from FAO which also reports the corresponding HS six-digit tariff code for these products.
2. Using FAO dataset, producer prices for agriculture products are extracted for all countries and a rank is assigned to each country for each product in terms of its producer price. The country with minimum producer price is

ranked one. Thus, for each of the agricultural product of India, a rank is allotted in terms of its relative producer price.

3. Using the constructed data set, products where India's rank in terms of producer prices ranges between 1-20 are selected. Using this filter, out of 95 products, 63 products are selected which have the corresponding rank for producer prices between 1 to 20. However, just having lower prices may not be sufficient as there needs to exist corresponding supply capacity. Therefore a further filter is applied and those products out of these 63 products are selected where India's share in world production was $> 5\%$. Using these two criteria we arrive at 38 products.
4. Alternatively, using the export data at HS six-digit level, we estimate the export unit values (export value/export quantity, UV) for the agricultural tariff lines taking an average of three years, i.e. 2005-07). Average revealed comparative advantage (RCA) indices for the same period are estimated for each of the tariff line using the ratio of global exports of India in the particular tariff line to total global exports of India. UV and RCA are also estimated for the world in each of the six-digit tariff line. A ratio of /world's UV to India's UV is arrived at for each of the lines. A ratio higher than 1 in a particular tariff line would imply that world UV (which is used as a proxy for export prices) is higher than India's UV indicating that India has a price advantage in the product. Similarly, ratio of India's RCA to world RCA in each of the lines is arrived at. $RCA > 1$ for any line will indicate that India has a competitive advantage in that time. All tariff lines where $UV > 1$ and $RCA > 1$ are identified, which would imply that in these lines, India has a competitive advantage and a price advantage. There are 67 such tariff lines at six- digit.
5. To arrive at the final export list we take a union of the two sets of the identified tariff lines i.e 37 products using production criteria and 59 products using trade criteria. We arrive at a list of 96 agricultural products where India has export interest. Interestingly, only 8 products are in the list are to be identified by both production criterion and trade criterion.

India's Export Interest in Agriculture:

S.No	HS Code at 6 digit	Description	FAO item codes	Description	Share in world production > 5%	Rank < 20	UV > 1	RCA > 1
1	20110	Carcasses and halfcarcasses	2071	Bovine meat +			1.90	2.34
2	20120	Other cuts with bone in	2071	Bovine meat +				
3	20130	Boneless	2071	Bovine meat +				
4	20210	Carcasses and halfcarcasses	2071	Bovine meat +				
5	20220	Other cuts with bone in	2071	Bovine meat +				
6	20230	Boneless	2071	Bovine meat +				
7	20610	Of bovine animals, fresh or chilled	2071	Bovine meat +				
8	20621	Tongues	2071	Bovine meat +				
9	20622	Livers	2071	Bovine meat +				
10	20629	Other	2071	Bovine meat +				
11	40110	Buffalo milk, whole, fresh: Of a fat content, by weight, not ex	951	Buffalo milk, whole, fresh	67.3	4	1.19	20.55
12	40120	Buffalo milk, whole, fresh: Of a fat content, by weight, not ex	951	Buffalo milk, whole, fresh				
13	40130	Buffalo milk, whole, fresh: Of a fat content, by weight, ex	951	Buffalo milk, whole, fresh				

14	40210	In powder, granules or other solid	898	Milk skimmed dry			1.04	1.87
15	40700	Birds' eggs, in shell, fresh, prese	1062	Hen eggs , in shell	4.5	11	1.63	2.41
16	40900	Natural honey	1182	Natural honey			1.15	2.17
17	70110	Seed	116	Potatoes	7.5	2		
18	70190	Other	116	Potatoes				
19	70310	Onions and shallots	1940	Onions +			1.66	9.72
20	70820	Beans (Vigna spp., phaseolus spp.)	414	Beans, green	6.3	12		
21	70990	Other	430	Okra, pumpkins, others	61.3	13		
22	71010	Potatoes	116	Potatoes	7.49	2		
23	71190	Other vegetables, mixtures of veget	474	Veg. in tem. Preservatives			1.57	9.13
24	71220	Onions	403	Onions, dry	12.2	5	1.48	12.07
25	71290	Other vegetables, mixtures of veget	469	Vegetables dehydrated – potatoes				
26	71310	Peas (Pisum sativum)	469	Dried vegetables – peas	65.1	10		
27	71320	Chickpeas (garbanzos)	191	Chick peas	65.1	10		

28	71333	Kidney beans, including white pea b	469	Dried vegetables – kidney beans	65.1	10		
29	71339	Other	469	Dried vegetables – oters – guar	65.1	10		
30	71390	Other	197	Pigeon peas	72.0	2		
31	80119	Other	249	Coconuts	18.2	7		
32	80131	Cashew nuts; n shell	217	Cashew nuts, with shell	17.3	15		
33	80290	Arecanuts: Other	226	Arecanuts	55.0	4		
34	80300	Bananas, including plantains, fresh	486	Bananas	24.8	19		
35	80430	Pineapples	574	Pineapples	6.8	19		
36	80450	Guavas, mangoes and mangosteens	603	Fruit, tropical fresh nes	18.8	12		
37	80610	Grapes fresh	560	Grapes			1.52	1.15
38	80620	Grapes dried	560	Grapes				
39	80720	Papaws (papayas)	600	Papayas			2.81	1.03
40	90111	Not decaffeinated	656	Coffee, green			1.09	2.22
41	90121	Not decaffeinated	1956	Coffee green + roast +			1.27	1.70

42	90122	Decaffeinated	1956	Coffee green + roast +			1.27	1.70
43	90210	Green tea (not fermented) in immedi	667	Tea	24.9	11		
44	90220	Other green tea (not fermented)	667	Tea			1.27	1.70
45	90230	Black tea (fermented) and partly fe	667	Tea			1.27	1.70
46	90240	Other black tea (fermented) and oth	667	Tea			1.27	1.70
47	90411	Neither crushed nor ground	687	Pepper (Piper spp.)	18.1	9		
48	90412	Crushed or ground	687	Pepper (Piper spp.)			1.06	8.78
49	90420	Fruits of the genus capsicum or of	689	Chillies and peppers, dry	42.3	20	1.45	21.07
50	90500	Vanilla	692	Vanilla			2.38	3.07
51	90810	Nutmeg	702	Nutmeg, mace and cardamoms	24.0	8		
52	90820	Mace	702	Nutmeg, mace and cardamoms				
53	90830	Cardamoms	702	Nutmeg, mace and cardamoms				
54	90910	Seeds of anise or badian	711	Anise, badian, fennel, corian	24.4	8		
55	90920	Seeds of coriander	711	Anise, badian, fennel, corian				

56	90930	Seeds of cumin	711	Anise, badian, fennel, corian				
57	90950	Seeds of fennel; juniper berries	711	Anise, badian, fennel, corian				
58	91010	Ginger	720	Ginger	27.6	14		
59	91099	Other	723	Spices, nes	72.8	7	2.88	12.27
60	100190	Other	15	Wheat	11.6		1.10	
61	100610	Rice in the husk (paddy or rough)	27	Rice, paddy	21.8	6	2.00	1.19
62	100640	Broken rice	32	Rice broken			1.23	6.79
63	100700	Grain sorghum.	83	Sorghum	12.1	11		
64	100820	Millet	79	Millet	34.7	7	1.17	22.57
65	110230	Rice flour	38	Rice flour			1.45	3.46
66	110290	Other	80	Flour of millet			1.00	84.33
67	120210	In shell	242	Groundnuts, with shell	20.0	16		
68	120220	Shelled, whether or not broken	243	Groundnuts shelled			1.02	13.80
69	120730	Castor oil seeds	265	Castor oil seed	66.8	19		

70	120740	Sesamum seeds	289	Sesame seed	19.4	10		
71	120799	Other oilseeds	339	Oilseeds, Nes	5.0	13		
72	121299	Other	156	Sugar cane	20.2	13		
73	151530	Castor oil and its fractions	266	Oil of castor beans			1.05	64.93
74	151550	Sesame oil and its fractions	290	Sesame oil			1.81	6.14
75	170191	Containing added flavouring or colo	164	Sugar refined			1.22	3.54
76	170199	Other	164	Sugar refined				
77	170230	Glucose and glucose syrup, not cont	172	Glucose and dextrose			1.05	1.22
78	170390	Other	165	Molasses			1.20	4.53
79	200310	Mushrooms of the genus agaricus	451	Canned mushrooms			1.58	1.28
80	210111	Extracts, essences and concentrates	659	Coffee extracts			1.41	2.66
81	230240	Of other cereals	81	Bran of millet			1.00	84.36
82	230641	Cake of rapeseed: Of low erucic acid rape or colza se	272	Cake of rapeseed			1.02	12.67
83	230690	Cake of seasame seed: other	291	Cake of sesame seed			1.11	13.59

84	240110	Tobacco, not stemmed/stripped	826	Tobacco, unmanufactured	8.3	17		
85	241020	Tobacco, unmanufactured	826	Tobacco, unmanufactured				
86	241030	Tobacco, unmanufactured	826	Tobacco, unmanufactured			1.74	3.06
87	410310	Of goats or kids	1027	Skins dry slt goat			1.24	22.04
88	410411	Full grains, unsplit; grain splits	928	Skins wet salted calves			1.51	1.13
89	500100	Silkworm cocoons suitable for reeli	1185	Silk-worm, cocoons, reelable	18.0	4		
90	500200	Silk +- raw silk	1971	Silk +- raw silk			3.22	1.56
91	500300	Silk +- silk waste	1971	Silk +- silk waste				
92	520100	Cotton, not carded or combed	1901	Textile fibres + raw cotton			1.19	7.05
93	520210	Yarn waste (including thread waste)	1901	Textile fibres + cotton waste				
94	520300	Cotton, carded or combed	768	Cotton carded, combed			1.07	1.87
95	530310	Jute and other textile bast fibres	780	Jute	64.1	6		
96	530390	Other	780	Jute			1.51	2.39

We find that out of these 96 tariff lines, 20 lines fall under chapter 9, which is coffee, tea, meat and spices; 14 lines are under chapter 7, which is edible

vegetables and certain roots and tubers and 10 tariff lines fall under chapter 2, which is meat and edible meat offal.

Strategy for Doubling Exports in Next Three Years (Source: Chapter on Agriculture in the Strategy Paper at the website of Deptt. Of Commerce)

According to the 2009-10 figures, the total export of agricultural products (excluding Plantations) comes to **12118.56** million USD. The strategic targets projected for 2013-14 are given below:

Item	2007-08 (achieved)		2008-09 (achieved)		2009-10 (achieved)		2013-14 (projected)		Remarks
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	
Basmati rice	11.83	1079.64	15.56	2060.52	20.16	2284	30	3600.00	About 25% annual growth Price USD 1200 per MT
Non Basmati rice	52.86	1841.41	9.31	366.87	1.39	87.42	55	2750.00	At the level of best performance years in past. Price USD 500 per MT
Other Cereals (Maize etc)	32.28	746.09	40.00	852.42	29.04	633.37	60	1500.00	At the level of best performance years in past. Price USD 500 per MT
Wheat	0.002	0.06	0.01	0.32	0.0002	0.05	20	500.00	Limited release of 2 million MT Price USD 250 per MT
Pulses	1.64	130.81	1.36	117.46	1.00	85.86	4.00	300.00	At the level of best performance years in past.
Meat, poultry and dairy	-	1277.12	-	1503.49	7.20	1517.72	12.50	3250.00	About 30% annual growth
Fruits & Vegetables	-	726.74	-	956.53	-	1090.42	-	2630.00	About 30% annual growth
Processed Foods/Spirit & Beverages	-	766.44	-	965.86	-	980.20	-	4230.00	About 75% annual growth
Nuts and Seeds	7.19	1241.52	6.34	1238.98	6.84	1211.16	1.66	2365.00	About 25% annual growth
Tobacco	1.73	480.08	2.08	752.51	2.31	915.91	-	1400.00	About 20%

									annual growth
Sugar & Molasses	55.82	1407.22	35.04	985.24	0.75	27.40	5.80	1400.00	At the level of best performance years in past
Oil Meal	69.08	2022.95	67.42	2232.77	46.88	1654.52	84.67	2600.00	About 105 annual growth
Guargum meal	2.11	279.75	2.58	291.13	2.16	238.78	3.16	350	
Floriculture Prod/Fruit & Veg Seeds	-	119.85	-	106.28	-	92.58		171.00	At the level of best performance in past
Miscellaneous	-	1072.24	-	1378.10		1299.17		936.00	About 1.5 times of present export
Total*		13191.92		3808.48		12118.56*		27982.00*	

* This includes meat & meat products but does not include Tea, Coffee and Spices etc details of which have been set out in Annexure II

** In case Non Basmati, Wheat and other cereals are not allowed to be exported it will be around USD 23232/-

As can be seen, the highest increase is possible in the **food grain** segment where besides the average 25% annual growth in Basmati rice, the policy decision to allow export of Non Basmati Rice, Wheat and other cereals available above the buffer norms can easily achieve and overshoot the targets.

The other major enhancement that can be achieved is in the field of **value added processed products**, where there is a huge potential and the incentives given for the units manufacturing export products can do the trick.

In the case of **meat, poultry and dairy products** and meat products also, the projected doubling of exports can be realized if we can adopt good animal husbandry practices and a uniform policy for slaughtering, maintenance of abattoirs and address the quality concern and backward linkages.

In the **fresh fruits and vegetables** segments, the doubling of exports is very much feasible as India is one of the leading producers of these commodities.

Ensuring cold chain corridors with cargo handling facilities for perishable commodities can avoid large scale wastage that currently takes place post harvest.

In the **nuts and seed** segments also, the exports can double provided some policy incentives are given to the exporters concerning logistics which are common to others and some issues regarding HS classification and VKGUY are addressed.

Oil meals also have good potential to register substantial gains if some of their demands concerning HS classification and incentives under VKGUY are properly addressed.

Guar gum: The growth of export of guar gum has potential subject to consistent supply of Guar Seed and its quality. Lack of infrastructure support, poor technology and poor agricultural practices, the yield of the crop grown in arid zone of the country is low and needs to be addressed.

Any substantial increase in the growth of **Tobacco** exports will be constrained by India's obligation under the Framework of Global Tobacco Control. However, over 50% growth can be achieved by improving the curing and realizing better prices in traditional markets and finding new markets.

Pulses and Sugar will always remain dicey candidate for exports in view of perennial shortage in the case of former and seasonal uncertainty in the case of the latter. Still new initiatives like encouraging organic exports may open up fresh opportunities for these products.

Organic products though having a low threshold can easily go up substantially with more dissemination of information on compliance, standards and equivalence agreements with importing countries.

To achieve the above projected export figures, following funds will be required in addition to the normal budgetary provision for APEDA:

S. No.	Product/Sector	Intervention	Requirement in Rs crore over three years
1	Fruit, vegetables and other perishables	Dedicated cold chain corridors with assistance to both public and private sectors	200
2	Fresh Fruits & Vegetables	Market Promotion	15
3	Processed Foods	Building up of quality / Promoting adoption of HACCP, ISO, GAP, Traceability standards	60
4	Live stock products	Backward linkages for increasing live stock population and better animal health for meat production	60
5	Organic products	Capacity Building for production and certification	15
6	Agro products in consumer packs	Promoting exports in Indian brands for direct retail	100 (fiscal incentives through DGFT)
	Total		450

Besides, additional funds under ASIDE and VKGUY will be required to boost agricultural exports.

Contours of Strategy:

In a country like India with over 1 billion population and agriculture largely depending on the vagaries of monsoon with serious issues of food security, any strategy to promote agricultural exports will necessarily have demand and supply at its core with instruments of procurement, storage and distribution to service the same. The periodic and recurrent spurts in price of essential commodities do not augur well for exports. It is, therefore, essential to have a very clear policy about food grains based on the buffer norms and strict implementation of the same. As for the perishable products like fruits and vegetables, it is proposed to have a system whereby critical reserves could be procured and stored at strategic locations by a centralized agency to ensure that any unusual rise in the price of a

perishable essential commodity can be offset by prompt delivery of sufficient quantities to control the prices. Such centrally procured stocks of perishable commodities if unutilized for price stabilization, can then be offloaded in the retail market / PDS or exported where possible with or without processing before the new harvest of that product comes into the market. This system will need to be fine-tuned to ensure availability of essential commodities at reasonable price in the domestic market and at the same time continue with sustainable exports to remain a credible supplier in the international market.

This kind of centralized procurement and storage will require substantial infrastructure to be built in terms of warehouses, cold storage, reefer vans, food processing plants with provision to press in service special railway racks for swift distribution in the domestic market and shipment to the exporting ports. Dry port facilities may be created at strategic locations in the growing / processing areas to avoid any delays in handling procedures and pre-shipment inspections etc. The necessity to develop the post-harvest storage technology and food processing technology cannot be over emphasized in our country where we process hardly 3% of our fruits and vegetables and annually suffer wastage of anything from 20-30% of the crop for want of adequate post-harvest handling facilities and market linkages. Appropriate schemes can be devised for providing incentives for basic food processing and warehousing in the private sector while Government can create the required infrastructure by going in for common facilities for packaging, creating corridors for perishable commodities and cargo handling centres for perishable commodities at all the airports and seaports. Berths may be increased at existing ports and new ports in the private sector may be encouraged to avoid any congestion and delay.

Any international trade in agricultural agricultural and processed food products depends on the international demand and supply situation, availability of the concerned product in the domestic market at reasonable price, health safety and quality standards as may be applicable in the importing countries and price competitiveness. For these reasons, it is important to disseminate information about the quality requirements of major markets, create a network of certifying agencies backed with laboratories manned by trained technicians. Besides, we

must encourage agreement for conformity of standards, standard equivalence and agriculture market access for our agricultural products in the focus countries.

Certain **generic and product specific measures** required to achieve the above targets have been identified, and are indicated below.

Currently, India's Agri export share in the international market is about 1.4%. Being an agriculture country, there is a tremendous scope to increase India's Agriculture export from US \$10809.95 Million (2009-10) to US \$27632.00 Million (2013-14). However, to achieve this projected target, EP (Agri.) Division has worked out the following generic/common as well as product specific approach

Generic/common measures:-

- i) Enhancing production through increased acreage & increasing productivity by adopting Good Agricultural Practices (GAP).
- ii) Improvement of Infrastructure facilities, especially at post harvest stage
- iii) Strengthening of backward linkages for increasing the supply of raw material.
- iv) Increasing Market Access and Aggressive Promotion activities.
- v) Research & Development to improve quality of produce at farm level.
- vi) Institutional mechanism to impart knowledge & information among farmers about quality, statutory and procedural requirements of major importing countries with specific focus on European Union, USA, Middle East etc.
- vii) No grant of concessions under FTAs in agriculture sector without redressal of our outstanding issues and based on reciprocity e.g. Under EFTA concessions/further market access may not be granted without resolution of issues relating to MRLs on various agri commodities.
- viii) Preferential export promotion policy support for value added products vis-à-vis raw material exports e.g. Castor oil products, Guar Gum etc.
- ix) Allowing exporters to pay ocean freight in dollar terms to the shipping companies in USD from their EEFC account there by reducing transaction cost towards freight by at least 1%.
- x) Insuring availability of adequate and cheap export credit in foreign currency.

- xi) Harmonization of state laws/procedures/taxation issues relating to agri commodities having huge export potential.
- xii) Incentive for contract farming drip irrigation for enhancing farm productivity.
- xiii) Engaging major export destination to remove/reduce duties on exports of important Indian agri produce.
- xiv) Provision of electricity to cold chain and other agri infrastructure (Green House etc.) at the same rates as provided to farmers.

Product specific measures:-

A. Cereals (Rice, Wheat and Coarse Grains):-

1. **Strength:** High acreage of farming and involvement of major chunk of population in the farming of cereals.

2. **Impediments:** Lack of awareness of scientific approach of farming resulting in lower yields, inferior quality produce having unacceptable levels of pesticide residues, etc.

3. Suggestions:

- i) Opening up of exports of non-basmati rice and wheat subject to realistic Minimum Export Price (MEP)/quantitative restriction.
- ii) Sustainable, long term and stable export policy instead of knee jerk reactions to short term price fluctuations.
- iii) Promotion in new markets by signing protocols related to Pest Risk Analysis (PRA) with more and more countries.
- iv) Strongly opposing incidence of imposition of unscientific and unrealistic Pesticide Residues MRLs by important trading partners like the EU.
- v) Speedy action on registration of Basmati Rice and any other India specific commodities for GI.

B. Live stocks (Cattle, Buffalo, Sheep, Goat and Poultry): -

1. Strength: 13% of the world cattle population with 56.6% of world Buffalo population and 15% of world goat population. Bovine meat export, which constitutes almost 80% of total live stocks exports, has huge potential to increase overall exports. Presently major markets of Buffalo meat are Vietnam, Malaysia, Philippines, Egypt, Kuwait, Saudi Arabia, UAE etc.

2. Impediment:

- (i) Lack of uniform slaughtering policy across the all states of India.
- (ii) Lack of disease free zones in the country.
- (iii) Non availability of domestic standards.
- (iv) Market Access issues with quality sensitive countries like EU.

3. Suggestion:-

- a) Increasing the supply of quality livestock through scientific rearing practices.
- b) Improvement in disease status in respect of diseases like Foot and

Mouth Disease (FMD) by creating disease free zones.

- c) Better implementation of existing Plan Scheme for livestock health and disease control.
- d) Penetration into new market like Russia, China, EU etc.

C. Cashew:

1. Strength: - Installed capacity of cashew processing units of approximately 15 lakh MT. Biggest producer, consumer and exporter.

2. Impediment:

- i) Production which is only 6.13 MT during 2009-10, lagging behind processing capacity.
- ii) Dependency on imported raw material

3. **Suggestion:**

- i) Increment in acreage to improve production and provision for subsidies for replanting senile trees with new high yield varieties. Wastelands can be utilized for cashew cultivation.
- ii) Modernization of the cashew processing units in the country by financial supporting on sustainable basis the modernization of the units.

D. Fruits and Vegetable:

1. **Strength:** India ranks No. 1 in the production of many fruits and vegetables like mango, ginger, okra etc and 2nd in potatoes, garlic, eggplants, pumpkins, squash, guards, cabbage, cauliflowers/broccoli, onion etc. All together India ranks among the leaders in the production of fruits and Vegetables in the world's production.

2. **Impediments:** From 2007-08 to 2009-10, export of fruits and vegetables has registered a growth of 53.42% in quantity terms and 100% in value terms. The share of fruits and vegetable export in the international markets is less than 1%. Also, share of our exports is only 0.69 % of domestic production in respect of fruits and 1.69% for vegetables. An estimated 30% of the produce goes waste during post harvest stage.

3. **Suggestion:**

- i) **Pre-harvest:-** Increasing contract farming and retail chain through corporate initiatives to ensure better quality and shelf life of fruits and vegetables for export marketing.
- ii) **Post-harvest:-** Augmenting infrastructure facilities like creation of cold storages, integrated pack houses, cargo for perishable centres at every International Air Port to avoid wastage of fruits and vegetable at post harvest stage.

- iii) Putting in place strong and robust traceability programmes in respect of major fruits and vegetables.
- iv) Clear cut preference in handling perishable cargo export on priority basis at Sea Ports and Airports.

E. Tobacco:

1. **Strength:** One of the top tobacco producing countries.
2. **Impediments:** Global and domestic anti tobacco sentiment (WHO FCTC, COTPA).
3. **Suggestion:**
 - i) Introduction of E-auction system across all auction platforms.
 - ii) Opening of important markets like China.
 - iii) Separate quota for import of Indian tobacco by the USA.
 - iv) Increasing percentage share of exports vis-a-vis domestic production through Research & Development, aggressive marketing and greater market access.

F. Oil and Oil meals:

1. **Strength:** India is one of the largest producers of oilseeds in the world and exports by this sector amounts to around US \$ 1900 million. This sector promises to enhance India's overall agri exports substantially if appropriate policy interventions are undertaken.
2. **Impediments:** Competitive countries are extending extensive support to their oilseeds and oil export sector leading to higher share in world market.
3. **Suggestion:**
 - i) Exporters of this sector should be charged low interest rates against export credit to provide level playing field (currently interest is payable by Indian Oil

Seed Exporters against export credit is far higher than its competitors in other countries).

ii) Rationalization/proper classification of HS codes in respect of sesame seed, groundnuts, oilcake and oilcake meals (solvent extracted). Since sesame seed is classified under Chapter-12 – oilseeds (HS code) 12074010, the RCMC of IOPEC should be accepted for claim of benefit under VKGUY scheme for exports of sesame seeds.

iii) Specific focus with financial incentive to the exports of value added 2nd, 3rd, 4th generation derivatives of many oilseeds, vis-a-vis, export of raw material.

iv) Discouraging import of finished products instead of raw materials (crude oils) through tariff alignments of edible oil to the current market price.

II Review of Existing Plans and Schemes to Support Exports

Export Promotion Schemes

1 Introduction

The Export Promotion schemes pertaining to Agricultural and processed Food products are being implemented by the Department through Agricultural and Processed Food Products Export Development Authority (APEDA). APEDA came into being through an Act of Parliament, the Agricultural and Processed Food Products Export Development Act, 1985 (2 of 1986). A scheme launched by Directorate General of Foreign Trade (DGFT) also assists export of fruits and vegetables under its Vishesh Krishi and Gram Udyog Yojana (VKGUY).

2 Financial Assistance Scheme of APEDA

APEDA has been implementing financial assistance schemes during XI Five Year Plan. These schemes have helped in creating world class infrastructure facilities, improvements in quality standards and packaging

and have also helped in obtaining market access for various potential items in identified markets. The transport assistance scheme has helped exporters in mitigating the cost dis-advantages suffered by them

b) Scheme for Market Development

The scheme for Market Development aims at building a strong data base within APEDA by networking with major data bases world over and within India; create necessary infrastructure to facilitate creation of the data base and its updation and on-line dissemination to the end users; networking to bridge the gaps between the exporters etc. and guide the industry in this direction. In order to keep pace with the modern world of e-commerce, APEDA has initiated steps for updating the exporters' records through the internet and online registration for services are provided by APEDA. The scheme also provides for brand publicity through advertisement and facility of exposure to exporters in international trade scenario through participation in international trade fairs with APEDA under MDA, buyer-seller meets, product promotion programs.

Packaging is critical for delivery of product in good condition in view of the handling and transportation hazards. It improves the presentation of the product making it attractive for the buyers. APEDA has also got developed packaging standards for various potential products and provides assistance to exporters using packaging made to these standards and specifications.

The other important initiatives of APEDA under this scheme can be enumerated as follows :

- (i) Considering the concerns of food safety and traceability shown by importing countries, APEDA has set up traceability system for export of grapes to EU countries (GrapeNet) and organic products (TraceNet). The GrapeNet system setup by APEDA has bagged two awards, one National award for E-Governance and E-Asia

award. The traceability system for organic products set up is first of its own kind implemented at national level in the world.

- (ii) Market access for Indian agri. & processed foods. APEDA has achieved market access for various products in various countries. Some of the examples are mango to USA, Japan and China; grapes & bitter gourd to China; Basmati rice to Japan & China; animal products to Algeria, Morocco. Efforts are also being to get market access for India for India grapes, litchi and pomegranate to USA; mango and walnut to South Korea and mango & grapes to New Zealand; grapes & poultry products to Japan.
- (iii) APEDA had also organized promotional campaigns for basmati rice, beer and wine, Indian curries and snacks during major trade exhibitions abroad, which has helped to expand market and create a market profile for these products.
- (iv) Promotion campaigns are also organized for Indian mangoes and mango based products in Japan, USA, Germany Holland, Singapore, UAE, Malaysia, etc.,

b) Scheme for Infrastructure Development

Development of a strong supply chain infrastructure is critical for the growth of the agro and food sector including for exports. The production of fruits and vegetables in India is about 58 million MT and 177 million MT, respectively. However, 30–40% of the produce is wasted due to lack of adequate infrastructure for post harvest handling, transportation and storage. Therefore, efforts for upgradation of post harvest handling distribution and marketing facilities have been continued to cut down on wastages and for preserving the quality of fresh produce.

APEDA has taken a number of steps under this scheme for creation of infrastructure by the individual exporters as well as critical facilities for common use which have helped in improvement of the competitiveness of our produce in the international market

Some of the steps taken by APEDA to improve the supply chain efficiencies and increase the competitiveness of Indian fresh produce are:

- APEDA has provided financial assistance to individual exporters for setting up integrated packhouses, refrigerated vehicles, intermediate storage sheds, effluent treatment plants, water softening plants, mechanized handling facilities etc maintenance of the quality of the produce and for increasing the shelf life.
- Assistance has been provided to various PSUs and Central/state government agencies for setting up common infrastructure facilities like VHT facilities , Integrated packhouses Asceptic Packaging unit, collection centers.
- APEDA has also set up cold storage and cargo handling facilities at the key airports of New Delhi, Mumbai, Hyderabad, Bangalore, Chennai, Thiruvanthapuram, Kochi, Amritsar, Kolkata, Bagdogra, Goa, and Nashik airports. Such facilities are also being set up at Ahmedabad and Indore airports.
- GoI, through APEDA, assisted the State Governments in setting up modern world class marketing infrastructure. The Flower Auction Centres has been set up at Bangalore, Mumbai and Noida.

c) Scheme for Quality Development

Food safety is a prime concern in international trade in food products. These concerns can be effectively addressed only through proper backward linkages, hygienic processing, packaging, proper post harvest practices, harvest and pre-harvest practices right down to plant breeding, animal health and irrigation practices. Lack of infrastructure, lack of institutional coordination, shortage of technical skills and equipments, lack of updated standards, lack of awareness amongst the food handlers are some of the key constraints that need to be addressed early to maintain

the agro and food industry's capability to meet the global food safety requirements.

There is an increasing need to provide greater assurance about the safety and quality of food to consumers both in the domestic and the international markets. Though, a large number of testing laboratories are reported to be existing within the ambit of BIS, Agmark and Health Department of the Central Government besides Departments of the State Governments and municipal authorities. However, limited coordination between various food testing laboratories has led to inefficient utilization of the food testing infrastructure. Further, many of these laboratories do not have basic facilities to test antibiotic residues, heavy metal contamination and other toxic contaminants in food products.

For the international marketing, we need to have a network of food testing laboratories, which have accreditation as per internationally accepted systems. The infrastructure available at these laboratories needs to be strengthened for testing of raw materials and processed food products in accordance with internationally accepted protocols.

Some of the initiatives taken by APEDA under the scheme include:

- (a) Implementation of food safety standards (Hazard Analysis and Critical Control Points) result of APEDA's initiative, HACCP has been implemented in all meat, poultry and dairy manufacturing units. In addition, a number of processed food units (mango pulp, pickles, dehydrated products, curried products) have been encouraged to implement HACCP.
- (b) Development of Export Standards : The Government of India had set up a Standing Committee under the Chairmanship of Chairman, APEDA for formulating export standards for fresh fruits and vegetables. Product specific Core Groups formulate draft standards for adoption by the Standing Committee. Export standards for 41 potential fruits and vegetables have already been developed and are in process of

notification under the AGMARK Act. APEDA has also developed export standards for meat, poultry, animal casings and dairy products.

- (c) Participation in international standardization process: APEDA is playing an active role in product standardization at the international level. APEDA regularly provides inputs on product standards and codes of hygienic practices for various agricultural products at the Codex level. Many suggestions provided by APEDA have been accepted and these are helpful to the Indian exporters.
- (d) Residue Monitoring Plans (RMPs): RMPs have been developed and implemented by APEDA for grapes, pomegranates, groundnuts and onion. APEDA is in the process of consultations with exporters to develop RMPs for vegetables.
- (e) Web-based monitoring system: A web-based software for registration of grape farms, sampling and analysis of grapes for residue checks is implemented by APEDA. This software also aims at bringing out complete traceability in the residue monitoring procedure for grapes.
- (f) Plant Recognition Schemes: APEDA has also initiated a recognition scheme for pack houses (for horticulture produce), meat processing unit, groundnut processing units, cereal milling and floriculture units.
- (g) Conducting of awareness programmes for implementation of Good Agricultural Practices (GAP) by the farmers.
- (h) Recognition of consultancy and certification agencies for HACCP.
- (i) Recognition of laboratories for export testing and Residue Monitoring Plans implemented by APEDA (23 laboratories – 3 in public sector and 20 in private sector have been recognized by APEDA).
- (j) APEDA has prepared a document titled “India’s National Programme for Good Agricultural Practices (IndiaGAP)” and sent to the Government to consider its implementation.

d) Scheme for Research and Development

The objective of the scheme is to promote commercial research for the benefit of processors/exporters through various organizations under

ICAR/CSIR system and agriculture universities. APEDA has awarded R&D projects for product development, improving processing technologies. As per the requirement of the trade, APEDA has awarded following R&D projects :

- (a) Commercial research on litchi for extending the harvesting period.
- (b) Study the problem of black cells and black spots on pomegranates during sea transportation and cold storage.
- (c) Improvement in varieties and pre-harvest management in grapes.
- (d) Identification and eradication of mango stone weevil.
- (e) Spongy tissue problem in alphonso mango
- (f) Development of varieties of white onion for dehydration purpose.
- (g) Development of new amla products for export promotion

Research and Development has to be a continued process to meet the importing country requirements.

e) Scheme for Transport Assistance

The high delivery costs significantly erode the production cost advantage enjoyed by Indian farmers. High international transportation costs coupled with high costs of storage and inland transportation impede the growth and development of the export of agri & processed foods

Through this Scheme, Government of India has been providing Transport Assistance to exporters of select/identified horticultural, floriculture, processed food and animal products.

The scheme has witnessed growth in most of the eligible items. The growth in exports of some of the items during 2009-10 over 2007-08 is as follows :

- Prepared, preserved gherkins & cucumbers : 87%
- Fresh fruits : 72%
- Fresh vegetables : 50%
- Processed fruits & vegetables : 50%
- Preserved vegetables : 24%
- Boneless buffalo meat to West Africa : 24%

III Gap Analysis - Limitations in Exploiting the Potential

1. Restrictions on the Export of Certain Commodities from Time to Time.

Despite a very liberal Foreign Trade Policy, there have been several restrictions on the export of agricultural products. This prevents the regular flow of restricted commodities for export and makes it difficult to cultivate a regular market for these products on a sustainable basis. Frequent restrictions on the export of onions, pulses and wheat are some of the examples.

In the post WTO era, an export growth led strategy for the Indian agriculture could be considered as a preferred option.

2 Artificially Low Prices in Global Trade Due to Export Subsidies and Domestic Support by the Developed Countries

The biggest challenge which Indian exporters of agro and food products face in the international markets pertains to low prices as an influence of the excessive export subsidies and domestic support extended by the developed countries to their farmers. We can hardly survive the price war unleashed by the subsidy rich farmers of the USA and the EU. Negotiations under WTO, so far, have not made much headway in persuading the rich nations to stop giving subsidy to their farmers in different forms

Difficulties are faced by Indian farmers due to excessive domestic support by USA and other developed countries in the case of rice, wheat, milk products, poultry products. In the case of dairy and poultry products the excessive domestic support by EU also affect Indian exports.

There has to be a balance between the three pillars of the negotiations. If tariffs were to go down it is essential that developed

countries reduce export subsidies and domestic support implying reduction in production and increase in possibilities of import of foodstuffs by them from developing countries most of which are low cost producers.

3 SPS and TBT Issues

The Agreement on Application of SPS Measures contain detailed provisions on transparency, harmonization and standardization. However, the very high level of standards set by some developed countries make it amply clear that developing countries with their current level of industrial expertise would find it difficult to achieve these levels. Many of these standards, are set not on the basis of adequate scientific justification but are driven by commercial considerations. Hence, they tend to operate as non-tariff barriers affecting trade performance of developing countries. Standards set by private bodies have been started in many Western European countries which include parameters relating to social and environmental factors

Maximum Residue Limits (MRLs) for pesticides and drugs in the case of livestock products and for pesticides in gherkins and grapes are not harmonized by European Communities with Codex standards. In some of the products, the MRLs are not harmonized even within different member countries of EU. This lack of harmonization result into a technical barrier for Indian produce.

The approval by Japan of Vapour Heat Treatment protocols for control of pests in Indian mangoes has taken a very long time. Though, the protocols were developed by India quite sometime back, the Indian mangoes could reach Japanese market only in July 2006. Similarly the equivalence procedure for fruits and vegetables with China are in progress but at a very low pace. The matter

regarding upgradation of India's status to GBR level-I (signifying no risk of BSE) by European Commission has been pending for several years. APEDA has taken these issues relating to specific products with respective member countries during bilateral discussions. However, the experience on pace of such deliberations leaves much to be desired.

We have been suggesting that SPS Agreement should be amended to bring in more discipline in this regard. In case a higher level of protection is considered necessary within an existing standard, Member(s) concerned should bring it before the respective international standards setting organisation viz Codex/OIE/IPPC for revision in the original standard (or) a separate standard/measure be permitted for the concerned Member on clearance by Codex/OIE/IPPC as a special case.

4 Lack of Infrastructure leads to High Delivery Costs:

- 4.1 Provision of basic infrastructure relating to water, power and link roads in the rural areas, particularly production belts identified under AEZs. For this, various schemes relating to rural development, agro industry, water resources need to be implemented in convergence to ensure overall development of an identified area.
- 4.2 R&D with commercial linkages for development and introduction of varieties suitable for different end uses viz. table consumption and processing and/or suiting the requirements of different markets segments. This should include extension linkage for training the

farmers for use of recommended variety specific agronomic practices. The modules may be developed which are simple and easy to understand for the farmers. The modules should also cover the recommended maturity indices and harvesting techniques.

- 4.3 Strengthening of contract farming and other ways of developing backward linkages – a system may be developed for accreditation of service providers for extension services, quality management and logistics.
- 4.4 One of the main post harvest management practices is use of cold chain to prolong shelf life and preserve quality of fruits and vegetables. While cold storages are established in few pack houses, market yards and some airports, the available capacity is substantially low particularly at the farm level. Specialized cold storage with high humidity and facilities for ethylene removal as part of cold chain for export of fresh fruits need to be set up and made available for use on commercial basis. The supply chain infrastructure should include facilities for:
- Collection and aggregation in production areas with precooling
 - Movement and transfer of produce in specialized, reefer vehicles/containers
 - Holding of stocks near to the markets with specialized storage facilities.
- 4.5 Multi modal transport facilities to link production areas with markets/exit points

- 4.6 Infrastructure facilities for common use.
- Integrated production and processing facilities for different products such as pack houses for horticulture products, abattoirs for meat, meat products, etc.
 - Strengthening of facilities at APMC markets and opening of new terminal markets both in public and private sectors.
 - Cargo handling facilities at sea/air/land ports
 - Wholesale market cum auction centers for flowers

4.7 Transportation by sea for cost competitiveness

The exports of agro products both in fresh form and as processed food products by air are expensive. Price competitiveness is essential in order to sustain the market.

For instance transportation of mangoes by air to most of our Asian markets especially to the west Asian markets is costlier by 10 times as compared to sea. Thus, export of fruits and vegetables in bulk by sea is the best alternative.

As such, there is a need for standardization of variety specific protocols for sea transportation, both for reefer and CA containers

4.8 Mechanism for compliance of SPS requirements

- a. The method of control of known pests and diseases vary from country to country (market specific viz. Vapour Heat Treatment for Japan; Hot Water Dip Treatment for China, Australia and New Zealand; Irradiation Treatment for USA.). We have to seek equivalence with the standards of the major importers.

Institutional mechanism needs to be strengthened immediately to deal with these issues in a focused

manner to bring in speed in the process of obtaining equivalence for country specific SPS measures.

b. Markets in developed countries demand documented data on pests and disease status. Such markets can only be accessed after introduction of a regular system for monitoring through survey and surveillance of different production belts of major crops to begin with. We need to build up such data on a regular basis. At present, we react to the demand from the importing countries.

c. Development of risk analysis mechanism

4.9 Infrastructure for testing of quality as per international requirements – setting up of new labs, strengthening of existing labs both in public and private sector.

Infrastructure and Policy Support for External Trade

Approach for XII Plan :

- Agro Exports provide a very small part of the total agriculture production – however, could provide the pull effect for growth and bench mark of quality
- DoC has formulated strategy for doubling exports by the end of 12th plan to Rs. 2.20 lac crores
- Emphasis on selected product lines to selected markets

Focus on :

- Food safety (MRLs, GAP, HACCP, ISO 22000)
- Traceability
- Fair Trade / Forest / GAP Certification
- GI registration – Basmati
- Market Access Efforts

IV Recommendations for the XII Plan – Measures & Action Plan

1 Uniform Policy for Export of Agriculture Products:

Since export of agriculture products from India forms a small portion of the total production in the country for most crops, the exports are not likely to impact significantly the prices in domestic markets. Export Policy for agro products therefore need not be linked to seasonal changes in the pricing in the domestic market. When the domestic prices are high, the market forces are expected to take care of the domestic/ export flows of the produce. However, if the policy for export prohibition is not declared, some of the exporters may be able to meet their export market commitments.

The export of commodities like Non Basmati Rice, Wheat and Onion may be linked to production volumes/projections in the country with some minimum cut offs instead of price fluctuations. For example, in case of rice where minimum export price (MEP) is being declared by the Government from time to time for export of Basmati Rice, the same MEP may be left to regulate the export of all premium varieties of rice. If required, a quantitative ceiling in addition may also be prescribed such as 6 million MT per annum for Basmati and all other premium Non Basmati Rice together which can command the price equivalent to MEP or more in the global market.

2 Development of Multi-Modal Transportation :

Besides developing refrigeration technology and protocols for sea transportation of fruits and vegetables, application of similar technologies / protocols of transportation by road / rail should also be developed since multi modal transportation is required for most products in view of the production areas being away from the sea ports. Neighbouring countries like Pakistan, Bangladesh, Nepal, Bhutan, Myanmar and China could be

targeted through inter-modal transportation system, with complementary roles to be played by road transport and carriage through railways.

3 Promoting Voluntary Adoption of Quality Systems

One of the major challenges for India is to raise the level of quality building and quality assurance measures. Regulatory mechanism by the government and its agencies would not bring in the same results as a voluntary adoption of quality systems like ISO, HACCP would do.

Food safety is a prime concern in the international trade in food products. These safety concerns are spilling over to the domestic markets as well. These concerns can be effectively addressed only through proper backward linkages, hygienic processing, packaging, proper post harvest practices, harvest and pre-harvest practices right down to plant breeding, animal health and irrigation practices. Lack of infrastructure, lack of institutional coordination, shortage of technical skills and equipments, lack of updated standards, lack of awareness amongst the food handlers are some of the key constraints that need to be addressed early to maintain the food processing industry's capability to meet the food safety requirements both domestically and globally.

There is an urgent need to increase awareness and adherence to Good Agricultural Practices to meet the quality specifications of the international market.

4 Strengthening of Laboratories for Testing of Raw Materials and Processed Food Products

There is an increasing need to provide greater assurance about the safety and quality of food to consumers both in the domestic and the international markets. Though, a large number of testing laboratories are reported to be existing within the ambit of BIS, Agmark and Health Departments of the Central Government besides Departments of the State Government and

municipal authorities. However, limited coordination between various food testing laboratories has led to inefficient utilization of the food testing infrastructure. Further, many of these laboratories do not have basic facilities to test antibiotic residues, heavy metal contamination and other toxic contaminants in food products.

For the international marketing, we need to have a network of food testing laboratories which have accreditation as per internationally accepted systems. The infrastructure available at these laboratories needs to be strengthened for testing of raw materials and processed food products in accordance with internationally accepted protocols. The assistance currently available under the scheme of APEDA for Development of Quality is not adequate. So far under this Scheme 12 laboratories (6 in public sector and 6 in private sector) have been provided financial assistance for strengthening their infrastructure.

We need to invest in post-harvest and laboratory infrastructure, quality, food safety and training. We also need to re-orient our own extension machinery with an element of motivation.

- 5 India needs to standardize pre and post harvest management system and harmonize them with the international standards. Technical experts should participate in all the Codex and SPS/TBT related meetings and conferences.

Overall Policy Options for Reforms in Agricultural Marketing

- Agricultural Marketing may be moved to the concurrent list in the Constitution
- Central Government may enact a “Inter-State Agriculture Produce Trade and Commerce Regulation Act” under entry 42 (Inter-State Trade and Commerce) of the Union list
- An Authority to promote and regulate Inter-State Commerce may be set up as envisaged under Art. 307 of the Constitution

- GoI should amend the Forward Markets Commission Act and bring Spot Exchanges under its Regulatory control
- Fruits, Vegetables, Milk and other perishable commodities should be de-notified from the APMC Acts or exempted from market fees
- Procurement price of FCI for foodgrains should be inclusive of local taxes

CHAPTER 9

RECOMMENDATIONS

The Working Group analyzed the existing agricultural marketing system; assessed the infrastructure requirements and gaps therein; reviewed the policy framework for agricultural marketing; assessed the performance of external trade; and several related issues with a view to suggesting a roadmap for the XII Five Year Plan. The main focus of the Working Group had been on

- ❑ To empower the farmers to get a higher realization for their produce and a better share of the consumers' price;
- ❑ To improve efficiency in the marketing chain and reduce transaction costs;
- ❑ To reduce wastages; and
- ❑ Use secondary agriculture like bio-mass and residue utilization to improve overall economics.

The recommendations of the Working Group have been divided into following sub groups and these flow from the detailed analysis and justification presented in the preceding chapters:

I) ALTERNATIVE MARKETING MODELS

II) INNOVATIONS AND INSTITUTIONAL SUPPORT

III) IMPROVING EFFICIENCY & REDUCING TRANSACTION COSTS

- d) PHYSICAL MARKETS
- e) VIRTUAL MARKETS
- f) TRAINING & CAPACITY BUILDING

IV) REDUCING WASTAGES

- a) POST HARVEST LOSSES
- b) WAREHOUSING & BULK HANDLING

V) SECONDARY AGRICULTURE

- a) BIOMASS UTILIZATION

- b) RESIDUE UTILIZATION
- c) IMPORTANCE OF ALTERNATE CROPS – STEVIA
- d) MEDICINAL & AROMATIC PLANTS

VI) TRADE POLICY

- a) BARRIERS TO INTERNAL TRADE
- b) INFRASTRUCTURE & POLICY SUPPORT FOR EXTERNAL TRADE

ALTERNATIVE MARKETING MODELS

Recommendations for the XII plan:

Producer Organizations: Producers organizations (PO) could be the best alternative for enabling farmers / producers to get better remuneration for their produce because it enables aggregation of the produce and in turn gives the necessary bargaining power to get better price. To strengthen the Producer Organizations and to make them play an effective role in alternate marketing the following areas need attention: Credit availability, Capacity Building, Alternatives to Equity, Venture Capital Fund, State Support to Producer Companies (PCs), and Convergence of various schemes to PO.

Linkage with Retailers / Processors / Exporters : Linking directly producers with Retailers / processors / Exporters is another alternative marketing system which is cost efficient, technology friendly and enables quality improvement. Well designed interventions for the same are needed.

Price discovery: Market Intelligence and market information services would be a critical aspect in future. State interventions through a platform of virtual market could be one such instrument.

Direct marketing: Promote more of *Rythu Bazaars* / *Kisan Bazaars* which allows farmers to directly sell their produce to consumers without intermediaries, as it not only saves losses but also increases farmers' share in the price paid by the consumer.

Organized retailing: To be promoted by removing all restrictions on FDI for creating good competition for domestic players and to bring new technologies and management practices provided commodities are procured only from Producers Organizations.

Market Access for small producers: The market access depends on: (a) understanding the markets, (b) organizing of the firm or operations, (c) the existence of communication and transport links, and, (d) an appropriate policy environment. Understanding the markets in a modern context involves understanding the value chains and networks and their dynamics from a small producer perspective. Interventions like Farmer Common Service Centers could be an appropriate forum for such a market access.

Reforms for efficient traditional markets: The functioning of traditional markets (APMCs) needs to be improved to enhance their cost efficiency so that producers and consumers can realise better prices. The amended APMC Act allows for the setting up of private markets. It is also necessary to enforce an open auction system, improve buyer competition in markets, provide better facilities such as cold storage, and improve farmers' access to market information. These markets are important to small farmers and even a significant proportion of medium and large farmers, who still depend on them; they also serve as main competitors to contract farming and can improve the terms offered to contract growers.

Integrated Value Chain Promotion: There is a need to combine value chain promotion with livelihood perspective to enable the resource poor to enter in to and stay in to globalized commercial markets. Innovation in smallholder market linkage are needed in terms of partnership, use of information and communication technologies, leveraging networks, value chain financing, smallholder policy, and, even in contracts that can promote both efficiency and inclusiveness of the linkage.

Promotion of Innovative Marketing Models: Choosing the right market and a market development strategy is essential to scale up the operations that can come only by innovation of products and business models. It is not market

access but effective market participation that is at the heart of success of any market linkage for primary producers.

PPP for efficiency and effectiveness: Partnership with the private sector can come in handy as they can provide technology, and upgrade business (quality) and social standards. For this, POs and their staff and farmers should be more market-oriented and have the capacity to work with and negotiate fair contracts with private agencies. This requires training of PO personnel and farmers in modern markets and their dynamics which includes contract negotiation, business management, market research, supply or value chain analysis, basic business documentation and crop and farm plans and budgets. Farmers also need to be made aware of the need to respect contracts and specific terms and conditions including prices, rejections and penalties for default. Private sector agencies also need to invest in linkage building. Contracting agencies may provide inputs on credit to their contract growers in India as cost of production and transaction for high value crops is generally higher and difficult for growers to provide for from their own resources and networks. Convergence with various ongoing programmes for backward linkages provided to a private player taking care of forward linkages could be the desired model for PPP.

INNOVATIONS AND INSTITUTIONAL SUPPORT

Proposed interventions in the XII Plan

It is clear from the available data and market behavior that small producers, especially if they happen to be women, dalits, tribals and landless labour, dalits and tribals, are among the most disadvantaged in the current economic scenario. However, it also a fact that the present trends offer a tremendous opportunity to link small and disadvantaged producer groups to market opportunities to enhance incomes and return on labour and investments. The missing elements of support, information asymmetry and the most critical issue of finance are among the key factors that seem to determine the terms on which small producers relate to the market. The broad strategy that the XII Plan should follow in respect of extending help to smallholder agriculture and disadvantaged producer groups must expressly address these gaps and base itself on the following principles:

- (v) It must aim to improve the terms of trade of small producers with the market
- (vi) It must address risks faced by small producers and help to reduce them
- (vii) It must recognize the importance of small producers in the value chain and facilitate their inclusion in the wider economy
- (viii) It must target the moving small producers further up the value chain to increase their returns on investment and their economic security.

In the following paragraphs we suggest some specific strategies to be adopted in the XII Plan period that could help to achieve the above goals.

Institution building for small producers: supporting farmer producer organisations (FPOs)

Member based FPOs offer a proven new pathway to successfully deal with a range of challenges that confront small producers, empowering their members in a variety of ways. Overcoming the constraints imposed by the small size of their individual farms, FPO members are able to leverage collective strength and bargaining power to access financial and non-financial inputs and services and appropriate technologies, reduce transaction costs, tap high value markets and enter into partnerships with private entities on more equitable terms. With fragmentation of holdings a continuing phenomenon, FPOs offer a form of aggregation which leaves land titles with individual producers and uses the strength of collective planning for production, procurement and marketing to add value to members' produce. International and limited national experience in the performance of FPOs gives rise to fresh hope and make a strong case for supporting member based farmer bodies to significantly increase their power in the market place and reduce risks.

FPOs can provide essential goods and services to the rural poor, besides their own members, and **contribute significantly to the process of rural poverty alleviation**. They are seen as an important risk mitigation device to overcome the constraints faced by farmers, especially small producers seeking to benefit from growing market opportunities in developing nations. One FAO (2007) estimate placed the value of agricultural produce generated by existing FPOs

(largely cooperatives) in India and China in 1994 at US \$ 9 billion each. They have been found to positively impact research priorities through participation and closer feedback to scientists, besides providing valuable inputs to policy formulation by channeling the opinions of the farming community. The role of FPOs in reducing costs of financial intermediation for formal financial institutions and more effective targeting of small producers for financial services has also been favourably noted.

The XII Plan should mandate an institutional development component in all Centrally Sponsored Schemes, specifically targeting FPO formation among small producers, especially tribals, dalits and women. Ideally, this component should be at least 20% of the total outlay of the scheme. Assistance for this component should be spread over at least 5 years, which is the ideal period for an FPO to mature. Costing norms can be adopted from NABARD's farmer club scheme (which provides Rs. 3000.00 per member per year for a period of three years). Civil society and private sector organisations, besides other resource institutions like agriculture universities, Krishi Vigyan Kendras, ATMA, banks, cooperatives and other similar bodies can be identified for promoting and hand-holding FPOs. This window could also be used to provide support to existing FPOs for capacity building, managerial inputs, marketing etc.

The majority of FPOs that are likely to emerge as a result of this intervention will remain focused on addressing issues of crop planning, technology infusion, input supply and primary marketing. However, at least one fourth to a third could seek to leverage their presence further up the value chain, entering into direct retailing, value addition, storage and processing and engage in contract production of primary and processed agricultural produce. There will be a need to support the business development needs, both financial and non-financial, of such FPOs, mostly at the lower end of the value chain (e.g. setting up pack houses, grading centres, milk chilling plants, small cold stores, drying or quick freezing plants). There should be a window to access a **Business Development Fund (BDF)** by FPOs, should they decide to enter the value chain. The BDF can be conveniently created in the Small Farmers' Agribusiness Consortium (SFAC) alongside its existing Venture Capital Fund. This should be available as a one-time grant to any FPO which seeks support to understand the requirements of a sub-sector, preparation of (DPR (DETAILED PROJECT REPORT)),

documentation, consultancy services as well a one-time seed capital infusion, paid as a proportion of the equity raised by the FPO members.

Venture Capital, Governance and Marketing Assistance to small farm enterprises

A Venture Capital Assistance Scheme was launched through SFAC late in the X Plan and continued in the XI Plan. The main lessons from the scheme's performance in respect of small producers are as follows:

- vi) The minimum investment size of VCA projects has been pegged at Rs. 50.00 lakh, putting it beyond the capacity of individual small producers or even their collectives to qualify.
- vii) Almost the entire list of beneficiaries of the VCA during the XI Plan consists of private entrepreneurs and companies.
- viii) Benefits to small producers are mostly indirect, primarily as a source of raw material supply, with little or no sharing further up the value chain.
- ix) Most recipients of the VCA have noted the importance of organizing FPOs to making heir subsectors more competitive.
- x) Since the scheme was implemented only through public sector banks, it failed to leverage potential investment opportunities offered by cooperative and regional rural banks, besides private scheduled banks and specialized finance institutions, such as the National Cooperative Development Corporation (NCDC), Northeastern Development Finance Corporation (NEDFi) as well State Finance Corporations.

These lessons should be incorporated in a reformed and expanded version of the VCA scheme during the XII Plan. Key among the changes should be:

- 4. The minimum threshold size for individual projects should be reduced to Rs. 10.00 lakh (Rs. 5.00 lakh in north eastern and hill states), to encourage projects promoted by FPOs (these could be any form of producer collective, from cooperatives, associations/societies, producer companies or even self help group federations), producer groups, cooperatives, SHG federations and of course private entrepreneurs.
- 5. The list of partner financial institutions should be widened as far as possible to include all bodies that are notified by RBI as financial

institutions (this would include all the FIs listed in iv] above and even attract NBFCs licensed by RBI).

6. The necessity of leveraging bank finance with the VCA should be done away with, instead offering pure equity support in case the enterprise is being launched by producer collectives.

For the larger agenda of promoting agribusiness enterprises by producers, the following ideas could be tried:

vii) Facilitating SMF (Small and Marginal Farmers) Competitive Business:

Certain commodities (like milk, sugar) and verticals like seed have inherent advantages for SMF participation. Seed sector is particularly amenable for creating SMF businesses - the large presence of state sector – state corporations, NSC and government being a large market; suitable policy measures can create trade terms in favour of SMF Collectives. SRR (seed replacement rate) in the last decade has been rapidly increasing in agriculturally under-developed states, rapidly creating a new market which can be serviced by local seed farmer-producer companies. The BDF proposed to be set up in SFAC can perform the role of identification, incubation and seeding of these ideas.

viii) Support to Mitigate Management & Governance Deficits : At the level of

SFAC and similar apex structures, programs supporting managerial staff to undergo training, access to IT based enterprise management systems can be thought of. Emulating business corporations, producer businesses beyond a certain level of turnover, can be mandated to have Independent Directors and other business and statutory advisory support. CII has a program to provide mentoring support to new entrepreneurs; a similar mentoring program can be conceived for producer businesses with corporate tie-ups. Some corporates are also looking to provide their middle management with such opportunities.

- ix) Access to capital remains a big challenge due to inadequate initial capitalization.

Facilitative instruments like FLDG (First Level Default Guarantee, a sort of risk cover), loan guarantees etc. can be supported. Here again, using existing mechanisms like SFAC makes most sense.

- x) Setting up Trade Facilitation Centre/Hub - Enabling Processors/Retailers to Procure directly from small producers: Tax breaks already exist for setting plants in backward areas; these can be further tweaked to provide specific incentives for procurement from small-marginal farmers. A strongly anchored single-window, decentralized match-making, facilitative agency is required to assist potential investors/processors to negotiate licensing and pre-operative clearances. Transparent rules & procedures (inventory of guidelines at one place) and assistance in contracting procedures etc. can greatly accelerate participation of organized/formal market players to source produce.
- xi) Mandating “priority procurement” from small-farmers : Market players see a big profit_opportunity in the burgeoning Indian market, as trade in agri commodities is liberalized and even FDI in retail seems to be a near certainty. Creating a condition for compulsory procurement of 20% from SMF would not be difficult to trade off for entry into the lucrative Indian market. The experience of “priority sector lending” is worthwhile as it was applied to new private banks effectively. It also led to a lot of product innovation.
- xii) Creating a consumer connect through branding and certification of “Small Farm Produce”: The most assured sourcing pull is if consumers start associating beneficial (product or societal) attributes to small-farm produce. We feel that there exists a latent consumer demand that a certification trademark can unlock. Beneficial product attributes are discernable in table fruits, vegetables and spices, where timely picking and crop husbandry are critical variables. As the economy expands, the increasing rural-urban income disparity has created a growing segment of consumers who are interested in patronizing rural/small-farm produce; success of *Dilli Haat*, *Fab India* etc. prove this point. The key is in investing in the “Small Farm Produce” brand through grant funding at the outset and then allowing easy licensing to any producer/retailer who commits to promoting it.

Building Farmer-Private Enterprise Partnerships: new institutional innovations

The traditional producer vehicle to facilitate collective action for markets has been the cooperative or more recently, organizational forms like federations or Producer Companies. The track record of these organisations as sustainable, independent enterprises is limited, so while we continue to support the emergence of these organisations, new institutional innovations are required in search of sustained market access for farmers. Dynamic new markets, far-reaching technological and institutional innovations, rising aspiration of farming families, characterize the fast changing agricultural landscape. The emerging new agriculture is led by new breed of private entrepreneurs (unlike the traditional merchant capital with short-term view) in extensive value chains, linking producers to consumers. The new private sector is attempting to bring the market to smallholders. There is space in this process for meaningful arrangements of private enterprises teaming-up in the supply chain with producer collectives (formal or otherwise) and develop sustainable business models, not using primary producers only a source of raw material, but rather as business partners with sharing of profits. Here are some of the ways this might happen:

2. Lead Farmer Model : Lead farmers within the SMF community can be an aggregating node for information and output linkages with upstream enterprises. Traditionally, in the handloom sector, master-weavers have intermediated between the market and individual weavers. In the case of farm produce, these have usually been exploitative, like the *dudhiya* or local money-lender cum trader. However, recent efforts like ITC's e-choupals (Sanchalak), IDEI's IPMAS (Nursery Entrepreneur); PRADAN's Agriculture Production Clusters (Community Service Provider) have shown that it is possible to create aggregation points within the SMF cluster on more transparent and equitable terms. Typically private enterprise develops and promotes a 'lead farmer' model of organization, through which they identify and build the capacity of farmers who can meet their quality and volume needs in a consistent fashion. After demonstrating such capacity, lead farmers receive ever larger orders for produce and are invited to work with neighboring farmers to meet this demand. The lead farmer provides access to

technology, technical assistance and market access as embedded services. The cost of these services is then recouped via the sales margin. The expansion of this model is organic and depends on the identification of new lead farmers. It is low-cost, easily scalable and sustainable. Indonesia has seen large scale tie-ups between vegetable growers and supermarkets based on the “Lead Farmer” model. This can be one variation of the several possible to encourage contract farming on a large scale. In the view of this group, far more important than a facilitative legal framework is access to affordable and timely credit for contract growers. This can be linked to voluntary collectives of farmers emerging and tapping a softer line of credit, provided that there is a firm contract in hand. The mechanism can work on the lines of a LC (letter of credit) commonly used by exporters to raise short term capital from banks against firm orders.

2.Producer Companies co-capitalised by Private Venture Funds : The last decade has seen the emergence of a large number of social/ethical investors interested in supporting producer businesses with modest returns. These investors bring a host of linkages, management skills and ensure governance structure functions to demand performance and hold managements accountable. Zameen, producing pesticide-free and fair trade certified cotton fibre, services 6000 farmers at present. Agriculture and Organic Farming Group (AOFG) holds 43% of the shares (funded through two Dutch donors), Aavishkaar 33% (a private social venture fund) and the farmer's organizations 7%. Zameen's earnings from cotton sales are used to buy the shares from AOFG and Aavishkaar. Minor changes in the existing Producer Company legislation can enable private capital (with restrictions) participation; this would in a small way reduce management and governance deficits.

3. Co-create Value Chain through Joint Stakes Company: Assured markets are a big pull for SMF to collectivise and aggregate their produce. This has been the weakest link whenever SMF collectives have attempted to enter the market. The strength of the SMF is her mastery over the production system – as efficient producers of quality goods, partnership with private enterprise can unlock this potential at farm end. Community Companies of Fab India is one such example where Fab India as an upstream enterprise has helped organize individual

artisans in their own companies by assuring market for their produce and also placing its stake. Eco Tasar Private Ltd., with equity stake of private entrepreneurs and MASUTA producer company, is another such example. MASUTA's yarn producers are relatively assured that the entrepreneur will not back out. Farmers as shareholders is not a concept for promoting ownership, but is based on improving supplier-buyer coordination. It is about changing the relationship between farmers and enterprises into one that is more balanced – i.e. based on a “relationship between equals.” From the perspective of companies, having farmers as shareholder makes sense - secure supplies (as shareholders will prefer sell to their “own” company rather than ‘side-selling’ to a competitor), could create consumer connect and enhance brand value. Shareholding for farmers ensures financial benefits in the form of market access and secured sales; dividend income, appreciation in value of capital investments, improved access to business information and decisions. Shareholding as financial assets would also enable better access to bank credit.

There are a few successful international examples of financing farmers' shareholding – DFID's bank guarantee to producers to buy share in Divine Chocolate; in the case of Nshili Tea Corporation, African Development Bank and IFAD created a Trust fund to finance farmers to buy shares. A mechanism can be created with budgetary support to SFAC for placing matching funds in “co-created” businesses with producers.

Creation of ‘Agricultural Risk Fund for Small and Marginal Farmers’

Even with the most well coordinated efforts to link small and marginal producers to investments and markets, a wide variety of risks will continue to bedevil these categories of farmers. Climate change, pressure on arable land for competing uses, infrastructure bottlenecks and market risks will cause both short and medium volatility, adversely impacting small producers. The Agricultural Risk Fund (ARF) is envisaged as a permanent corpus which comes to the rescue of small producers in emergencies beyond their control, by primarily underwriting some key service institutions and activities. E.g. financial institutions of all hues (banks, NBFCs, cooperatives, SHG federations) can be encouraged to purchase

the cover of the ARF at a nominal fee (which can be as low as 1-2% of the amount advanced to each borrower) and receive a first-level-default-guarantee (FLDG) of 8%-10%. Premium rates could be adjusted for lower or higher FLDG cover. Similarly, agricultural insurance product vendors could approach the ARF for a similar FLDG. It is also possible to work out arrangements to use such a mechanism to evacuate high value produce from the north eastern and hill states, covering both transport and handling losses. In fact, the ARF could spur tremendous innovation in services to small producers with the umbrella that it offers.

At the same time, the ARF can become the guarantor of last resort to promote farm enterprises developed by small producers. One of the key constraints in launching these enterprises, as we have noted above, is the absence of sufficient margin money and equity on the part of small producers to leverage term loans from banks. ARF can offer viability gap funding for a period of one or two years to enterprises owned by small producers by charging a small fee similar to the FLDG arrangement. This would go a long way in covering start-up and initial marketing risks and spawn hundreds of farm enterprises promoted by small producers themselves (including FPOs, self help group federations, cooperatives etc.). By incentivizing them to move a few rungs up the value chain spiral, the ARF would contribute significantly in mitigating risks in agriculture.

Suitable modalities for the independent and professional functioning of the ARF (along the lines of the USO Fund for the telecom sector which supports rural telephony infrastructure) can be developed once the idea is accepted in principle. NABARD and SFAC can be mandated to act as the outreach arm of the ARF, actively building awareness of its provisions, identifying potential projects, appraising, disbursing and performing other services on behalf of the ARF.

Land leasing options: a Public Land Bank

Recognizing the reality of informal tenancies across the country, the overwhelming majority of which are held by small producers, including women, the landless and tribals, an urgent solution to this challenge is necessary. However, it is also a reality that land is a State subject and there is no legal remedy to the problem at the national level. The fear among title holders (and

many of the lessors are themselves small and marginal farmers) of losing possession and even title is widespread and real. Enacting a law to recognise tenancies would actually freeze the informal land lease market in the short run and may even result in forcible evictions of existing tenants. What we propose is an economic incentive to nudge States to act in favour of small and marginal landholders, landless labour, women, dalits and tribals. This can be achieved even as the concerns of landowners are addressed, besides bringing under cultivation huge tracts of fallow land held by absentee landlords who have migrated to urban areas.

The solution we propose is the creation of a Public Land Bank (PLB), with initial seed capital provided by the Govt. of India and the State Government in an 80:20 ratio. The PLB will be registered as a Society (on the lines of the central and state SFACs) and function directly under the control of the State Governments.

The primary function of the PLB would be to “take deposits” of land parcels from landowners and lease out the same for a period of between three to five years to small and marginal farmers, their collectives and other specially designated categories (including women cultivators, dalits, the landless and tribals). Obviously, leasing to corporates, large farmers and other prohibited categories (which will be specified at the time of the PLB’s creation) is completely ruled out. But why would State Governments set up the PLB and why would landowners want to offer their land to its pool?

Here the role of the economic incentive kicks in. Besides the initial seed capital contribution, Govt. of India should also offer a per hectare incentive (which can be scaled along with land size, category of holder and type) to encourage landowners to “deposit” their land in the PLB. The incentive can be structured along the lines of the interest subvention which the Central Government currently offers to financial institutions that offer short term crop credit to cultivators at reduced rates. It is possible to leverage this per hectare incentive in such a way that the bulk of it is passed on to the landowner as a topping up on the rent which he receives from the PLB. A small portion of the incentive could be retained by the PLB to cover its operating expense so that it is not tempted to raise its transaction fees. The incentive can be capped at a maximum of 10 hectares in the case of collectives and 5 hectares in the case of individual lessees. The

incentive can also be linked to the duration of the lease, with a five year lease earning a higher payout compared to a three year one. This provides a balanced set of options to both lessors and lessees.

The key feature of the PLB would be its ability to provide composite land parcels from its land bank to small producers and FPOs for a fixed period, while at the same time ensuring a rent to the owners and return of the land parcel at the end of the agreed period of lease. The landowner is assured of the protection of his/her title and of repossessing the land at the end of the period of “deposit”. The lessees benefit by dealing with a public authority, paying reasonable rent or profit sharing (as may be agreed at the time of the “deposit”). Most importantly, the legal lease (which would be recognised as a negotiable instrument) entitles the lessees to institutional finance, completely changing the economics of their production cycle. Interventions such as mechanization and application of modern technologies, besides sourcing quality inputs and managerial support all become feasible when directed a reasonable plot size with shared costs. Market aggregators too will be attracted to these producers and contract production arrangements have a greater likelihood of spreading in this scenario.

A pilot on the above lines should be launched early in the XII Plan in collaboration with a few State Governments and its results studied and followed up on a country-wide basis.

IMPROVING EFFICIENCY & REDUCING TRANSACTION COSTS

PHYSICAL MARKETS

Recommendations:

The challenges for XII five year plan is to revitalize mandi yards and strengthen markets for high value commodity like livestock, horticulture products, fisheries with state of the art infrastructure. The recommendations for twelfth plan are as follows:

Recommendations related to APMC Act

- To provide the maximum benefits of Model Act to the farming community and increase private sector participation in agriculture sector sincere efforts are required by the State governments to adopt the Model APMC

act. All States to follow the Model APMC Act in letter & spirit. Essential features of the Act not to be mutilated , Rules to be notified within one month of amendment of the Act, Single licensing at the State level at a reasonable cost for procurement and trading of agricultural commodities, No restrictions in terms of distance from the existing markets, Government of India to review amendment of the Act through departmentally or through outside consultant from time to time

- A comprehensive study of APMC acts amended by the States *vis-a-vis* Model APMC Act and its implementation has to be undertaken so that the need for further modification in the Act for ensuring better market access for the farmers can be explored;
- Additional incentives to be given to States which are implementing effective market reforms
- Exploitation of farmers by commission agents needs to be checked by promoting direct linkage between farmers / producers and retailers / processors through other innovative marketing channels;
- Regular elections should be held of agricultural produce market committees and bring professionalism in the functioning of existing regulated markets
- To protect the rights of the farmers as well as sponsors of contract farming, a dispute settlement mechanism should be set up through pendulum type of arbitration.
- The market fees should be ploughed back for development of marketing facilities and investments for creation and/or up gradation of infrastructure in market yards/sub-yards
- There is a need for bringing uniformity in the state-level tax structure in agricultural commodities for improving the market efficiencies. Taxes and

fees on raw agricultural commodities should be rationalized, with a ceiling limit of 4 per cent;

- There is need to either deregulate the fruit and vegetables from the list of notified commodities under APMC Act or market fee should be waived off. The loss of revenue towards waiving of market fee may be compensated to the reformed States.
- Direct marketing of fruits and vegetables are to be allowed by bringing fruits and vegetables outside the ambit of APMC act to cut various intermediary levels; However, there needs to be a suitable alternative marketing space for sale of fruits and vegetables which can attract private investment with the same SOP as in APMC Markets
- Compulsory Registration of Buyers and Sellers and Active Role for APMC– At present, only Trader/Commission Agents are registered / licensed by APMC who have responsibility towards seller and APMC. More often, the brokers do sell the produce to traders on credit and do not have security of payment. This is cited as one of the most important reasons for lack of transparency in auction system. Therefore, it is proposed that the buyers in any APMC must be registered by APMC and should be given a credit limit. *'Seller may get himself registered with APMCs of his choice. After auction of produce, the seller may collect payment towards price of goods sold from APMC. It will be for APMC to collect payments from the buyers. This will not only improve the functioning of existing APMCs but also remove impediments in investment and operationalisation of modern markets with electronic auction system'*.**(comments- it can not be done as there is no such provision under APMC Act. Farmer-seller is not required to register with APMC. Pledge financing can be suggested to be implemented in case of distress sales by the farmer.)**
- Level playing field to be provided between existing APMCs and upcoming private markets. An independent regulator should be appointed to frame

service parameters and to resolve disputes between APMC and private markets, regulator must be other than APMC;

- Transparent Auction Systems and Price Discovery Mechanisms to be installed in all regulated markets;
- Professionalization of existing APMC Markets:
 - Professional manpower and Improved management systems;
 - Extended Services to the farmers, traders, exporters etc.
- State Governments to consider disinvestments of under-performing, non-profitable APMCs, Private sector to be invited for operation & management;
- No Market Cess or Supervisory Fee should be charged on perishable products like fruits, vegetables and flowers purchased through contract farming;
- Simple and facilitating contract farming agreement may be introduced to facilitate more players in such vocations;
- Existing national grade standards should be harmonized with international grade standards;
- Grading facilities at all the stages of marketing chain should be upgraded with the establishment of grading units and pack-houses in the villages/sub-yards, establishment of grading laboratories at appropriate locations;
- Value addition activities such as cleaning, grading, packing, primary processing, and storage should take place nearer to the farm or production center;
- Organization of the farmers into growers' groups/commodity groups/cooperatives/self help groups/producer companies to ensure the

participation of diversely located small and marginal farmers and their linkage with the markets;

- Develop 4000 Rural Primary Markets/Rural Periodic Markets/Rural Haats (out of 21000);) through incentivizing private sector investment and involving Panchayat Raj Institutions
- Modernize principal market and sub-yards;
- Encourage setting up of new wholesale markets by the private sector or in PPP mode;
- Set up Terminal Markets in major States under PPP mode to provide forward and backward linkage;
- Encourage Setting up of Farmers Markets in all major producing States to achieve a target of 50 per cent of the marketed surplus getting sold directly through these markets;
- Strengthen consumers markets run by the municipal corporations/councils for fruits and vegetables;
- Warehouse and Silo may be treated as virtual mandi to avoid double transportation
- Marketing is a service industry. Private investment will not only bring in additional investment in infrastructure but also provide efficiency in services, and set up benchmarks for service quality
- Companies providing quality private infrastructure should be exempted from paying the mandi fees
- As far as documentation is concerned, such private players may be allowed to use the relevant documentation like sauda patra, anugya patra and bhugtan patra on a self declaration basis. Necessary checks and

controls can be put in place and monitored by the mandi authorities in a centralized manner by verification of returns filed, as in case of commercial taxes

- The states like Bihar and Kerala where the APMC Act have been repealed there may be steps taken to create an alternative marketing infrastructure either through intervention from state government or through attracting private investment to create suitable marketing infrastructure for Agriculture produce including High Value Commodities

Recommendations related to Supply Chain Management:

- Organized logistic players, processors and retailers are to be encouraged to develop markets. Viability gap funding for the initial years may be extended on soft terms by Government;
- Dedicated railway wagons for transportation of perishable produce from major production centers to terminal markets or metros are needed;
- Extending Status of Warehouse to Cold Storages / CA Storages and extending coverage of scheme of warehousing Receipt System to Horticulture Produce fit for long duration storage such as potato, onion, apples etc;
- Encourage setting up of new wholesale markets by the private sector or in PPP mode;
- In order to intensify the private sector for creation of much required storage capacity for agri-commodities as a support to Physical Market, the subsidy/incentives under Gramin Bhandaran Yojana of DAC, Govt. of India should continue during the 12th Plan period as a separate Central Sector Scheme. However, the out-dated cost norm of Rs.1875/- per MT needs to be revised to Rs.3500/- per MT considering the present cost of construction. Further, subsidy available to various eligible categories may

be suitably enhanced to attract the private sector to aggressively participate in the creation of storage capacity for agri-commodities in rural areas

- Agri Warehousing including Cold Chain Infrastructure needs to be accorded the status of "Infrastructure" thus making the same eligible for various benefits/incentives available to agricultural projects. Though, in the Budget 2011, it has been proposed that Warehousing is accorded the status of Infrastructure, necessary notification is yet to be issued by the Finance Ministry
- Loans for construction of warehouses for agri commodities to be considered as priority sector lending eligible for subsidised interest rate i.e. at par with the Crop Loan
- Financing against pledge of Warehouse Receipt should also be considered as a priority sector lending eligible for subsidised rate of interest at par with the Crop Loan
- Encourage Setting up of Farmers Markets in all major producing States to achieve a target of 50 percent of the marketed surplus getting sold directly through these markets;
- Strengthen consumers markets run by the municipal corporations/councils for fruits and vegetables;
- The storage capacity gap of nearly 57 million tonnes at current trend of agricultural production an investment of Rs 14390 crores, may be considered for efficient handling and marketing of agricultural produce;
- Agri. supply chain is poorly integrated and highly intermediated posing challenges for efficient marketing. There are huge gaps in the system, both in terms of capacity – Total Cold Storage capacity in the country at present is only 20% of the targeted capacity and Integration – Critical

Linkages like Reefer Transport and On Farm infrastructure are almost nonexistent which needs to be strengthened;

- A realistic target of developing cold-chain was – To handle 15% of F&V in next 4 years and 40% in 6 years. The investment required – Rs. 22,035 Cr to gear up infrastructure to handle 15% of total F&V production and Rs. 55,074 Cr to handle 40% of total F&V production
- Long-term stability in government policy initiatives to encourage private sector participation in agri-marketing infrastructure and services. State level Agricultural Marketing Policy or Atribusiness Policy should be formulated and announced;
- Agricultural markets and related infrastructure to be considered as 'Infrastructure' and concessions applied for infrastructure sector to be extended;
- Amendment in EC Act to facilitate the creation of barrier free national market for the benefit of farmers and consumers ;
- Remove of inter-state barriers for Unified National Market;
- Applied research for developing Post Harvest Management protocols and facilitating introduction and enforcement of quality parameters like Codex / Agmark are to be given top priority;
- Setting up of Special Purpose Vehicle (SPV) for development and promotion of appropriate transport system for perishables is needed.

Others:

- Promote formation of small producer agencies in rural areas for bulk production and procurement at the village level through seeking active involvement of PRI members;
- Integrated approach so as to build strategic linkages between extension bodies at the grass roots like KVK and Common service Centre and

Market yards so that grading training ,market information and good agriculture practices can be handled by KVK at block level and farmers have more than one reason to visit KVK to avail extension as well as marketing information;

- Training of farmers and traders on Post Harvest Handling, Supply Chain Management and Marketing should be done frequently and more effectively through bodies like NIAM,MANAGE,DMI,NCCD,NSDC,CIPHET, SAMETI
- Promote formation of marketing self help groups for organised marketing; and
- Exploitation of farmers by commission agents needs to be checked by promoting direct linkage between farmers / producers and retailers / processors;
- Livestock markets and abattoirs are mostly in the unorganized sector. For the meat sector to be more vibrant, profitable, export-oriented, and a provider of safe meat, it is necessary that a perceptible shift takes place from the unorganized to the organized sector

VIRTUAL MARKETS

RECOMMENDATIONS FOR XIITH FIVE YEAR PLAN

Recommendations for futures exchange

- To strengthen the futures market regulator, it is crucial to expeditiously pass the Forward Contract Regulation (Amendment) Bill. This Bill is pending for a number of years. This will provide autonomy to the regulator, which is very much important for effective regulation of markets. Moreover, the amendment in the Act will pave the way for launch of farmer friendly options contract from futures on intangibles, viz; weather index, rainfall index etc.

- RBI should allow banks, financial institutions and FIIs to participate in futures contracts. This will increase depth in the futures contracts.
- Innovative stabilization scheme could be considered which would be aimed at price stabilisation and also the saviour for both the producers as well as consumers in times of crisis.
- Exemption to be extended to brokers engaged in forward contracts / commodity derivatives trading under section 194H of Income-tax Act, 1961
 - This section stipulates the payment of commission and brokerage is subject to TDS of 10%. However, it exempts *securities* brokerage/commission for the purpose of TDS deduction. As is well recognised, trading in commodity derivatives performs a very important function of risk mitigation and is operationally similar to trading in derivatives of stocks. Therefore, brokers getting commission from their clients on account of commodity derivatives trading should also be exempted under this section
- Providing 'infrastructure' status to commodity exchanges and allied agricultural infrastructure facilities under Section 80-IA of the Income Tax Act, 1961
 - Commodity Exchanges and supporting agricultural infrastructure such as rural warehouses, quality testing centres, etc. are critical elements in the agricultural supply chain. By generating substantial rural employment opportunities, they also ensure overall development of the rural economy. Hence, investments in commodity exchanges (spot and futures) and supporting infrastructure need to be promoted through tax measures so that national priorities such as agriculture and rural employment generation get the much-needed policy boost
- Transactions in securities, including transactions in Futures and options in securities is considered as genuine business transactions and therefore, profit/ loss arising there from is treated as business income/ business loss. The same treatment should be provided to commodity derivatives transactions. This can be done by amending Section 43 (5) of Income Tax Act.

Recommendations for Spot exchanges

- At present, pan India electronic Spot Exchanges are dependent upon the State APMC Laws to commence operation in a State. A number of States such as Punjab, Haryana, UP, etc. have still not amended their Law to enable Spot Exchanges.
- Spot Exchanges are designed on the lines of futures exchanges to operate pan India and promote intra as well as inter-state sale and delivery.
- Present State APMC laws are not designed to cater to such needs beyond a given APMC, let alone inter state sales and deliveries.
- A farmer's access to a pan India market through spot exchanges will give him the most efficient price in a transparent manner.
- Therefore, the Central Government should enact a legislation to enable spot exchanges to function on pan India basis, without over-riding the State APMC Laws.
- Ministry of Agriculture and Department of Consumers Affairs should jointly initiate this process.
 - ❖ The proposed Legislation may provide that:
 - ✓ Pan India Electronic Spot Exchanges may be set-up to conduct delivery based transactions in warehouse receipts
 - ✓ For transactions in and transfer of warehouse receipts, there is no need for compliance with APMC Act or VAT/ GST
 - ✓ But, at the time of deposit/acceptance and delivery of physical goods as a part of the settlement of the electronic spot trading, all such compliances, including collection of VAT, etc. should be adhered to.
 - ✓ APMC Act will apply in respect of farm produce at the time of deposit/acceptance in warehouse and release/delivery of stock, else they will not have any bearing on pan India electronic Spot Exchanges
 - ✓ FMC to be designated as regulator for such pan India Spot Exchanges under the proposed legislation as they have the expertise for regulating electronic trading.

- ❖ It will also integrate all electronic markets to bring efficiency to both spot and futures markets and provide a common interface for WDRA.
 - ❖ A buyer in spot exchanges can immediately hedge himself in the futures exchange for price protection.
 - ❖ In the interest of farmers, there should be no mandi cess applicable on sale of farm produce on any platform other than APMCs, as cess is linked to services rendered or infrastructure utilized. Since spot exchanges set-up their own facilities, they do not use the infrastructure of mandis and hence, mandi cess should not apply.
 - ❖ A small amendment in APMC Act or a suitable provision in the proposed legislation to that effect, as may be appropriate, would be required for the purpose.
- Spot exchanges can help the Government companies to reduce their cost of procurement. The large Government organizations such as FCI, APO (Army Purchase), State Civil Supplies Departments, etc. should be directed by the Government to procure, to begin with, at least 25 % of their requirements through spot exchanges. On spot exchange platform, farmers can sell their produce, while the Government companies can buy the same directly. This will reduce cost of procurement incurred by the Government companies.
 - This will encourage more effective procurement/MSP operations, especially in the non-traditional areas outside Punjab-Haryana-western UP.
 - The Government may also issue direction to the large Government companies to sell their commodities through spot exchanges. This will enhance their price realization and promote transparency.
 - Spot Exchanges have to spend huge amount on spreading awareness among farmers through ground level campaign. It involves manpower cost, cost of infrastructure, travelling, seminar expenses, etc. There is a huge cost on account of market development. The Government should provide fiscal support to the spot exchanges to carry out these activities in the interests of farmers or atleast FMC should include them as partners for awareness creation/capacity building like the future exchanges.

- Spot exchanges should be provided infrastructure status and they should be exempted from income tax for at least 10 years.

TRAINING & CAPACITY BUILDING

RECOMMENDATIONS FOR XII TH PLAN

A. Coverage : massive expansion of agriculture marketing training and capacity building for farmers and training staff

- (a) farmers and farmer's organizations
- (b) field level development functionaries and extension workers
- (c) training of farm women & rural youth
- (d) improvement of skills of personnel of marketing organizations including APMCs and SAMBs
- (e) other stakeholders and
- (f) training of banking , micro finance, SHG personnel

About 100 institutions including SAU's should cover training of farmers and officials

Staff training

1/5 th of agri staff to be trained per year in State Institutes, KVKs, Agri colleges, SAUs, State Boards,

Management education

In 5 years, 50 fellows from Industry, Govt. and Academia

Post graduate mgmt stdts in integrated and specialised agri mgmt (retail, comm, PHM,etc.) in National and Regional Institutes

1 year & 18 months PG. diplomas in State Institutes open to staff, agriculturists

F. Basic marketing skills training

Identification /access through KVKs, gram panchayats, SHGs, women groups, interested farmers, farmers production & mktg groups

100 training centres x200 trainees p.mx12 = 2, 40, 000 p.a

(including KVKs, SAUs, existing and new insts)

Basic (1 day) +follow up incentives@rs1000 =120 crores

2 contact (outreach) in the year

CONTENT Basic quality, standards, grading, safety

Packaging
Dealing with marketing chains,
Contract farming ,
Sources and use of marketing information

G. Capacity building for linking farmers to markets

Contract farming :

- Training of extn. Staff for mkt oriented agriculture,
- Pvt. Sector: extn and input support, managing risk
- Training farmers in legal rights & obligations, practices

Linking with organized chains

- Capacity building in terms of production and post harvest techniques for higher quality stds
- Assisting in obtaining national and international certification

Market information and SPS

Improving market information & market intelligence

- Dial-up services, mobile phone networks
- Rural kiosks
- Vernacular media
- Krishi programmes on TV
- Demystifying AGMARKNET
- Capacity building using communication Technology

Strengthening SPS capacity building

- Awareness creation in GAP, HACCP etc.
- Food safety illustrations & demonstrations
- Training for proactive strategy on exports

H. Risk and credit management

- FMC , MCX, NCDEX, National Spot Exchange & others may coordinate and expand their farmer awareness programmes conducted through training institutions to include all 2,40,000 farmers p.a. being covered.

- Basic exposure to insurance schemes for farmers through public and private insurance providers delivery through KVK, SAU's, State Institutes.
- Regional and State Institutes of agricultural marketing to train cooperative bank, RRB and NABARD personnel in agricultural marketing and credit linkages

I. Manpower for agribusiness management

- **self financing National Centres** (north, south and northeast) for core developments in agricultural marketing & agribusiness
- National issues, branding, strategy, global commodity trade
- Training in NBT, SPS, HACCP, GAP for Sr. Executives, policymakers
- 50 fellows in 3 centres/ 5years
- 2000 students (400x5) in PG courses, PhDs
- Annual 25 crores + 5cr/year/centre corpus x3= 200 cr

4 regional and 15 state institutes

- **4 self financing regional (east, west, central and hill areas) institutes** of agricultural marketing and agribusiness
 - Training of mid level officers (certificate courses 3,6, 18months diploma)
 - Training of agriculturists and other interested individuals for PG diploma of 3 months / 6mos (4x50x5) = 1000
 - 18 months adv. Diplomas
 - Training in NBT, SPS, HACCP, GAP for Sr. Executives, policymakers
 - corpus 4x3cr p.a.x5 =60 crores+30cr p.a.x4 = rs 180 cr
- **15 State Institutes** of Agricultural Marketing in partnership with State Government and Industry
 - Advanced agriculturists training (certificate)

- Marketing extension and market boards staff training (once in 5 years) = $6 \text{ crp.a.} \times 15 \times 5 = \text{Rs } 450 \text{ cr}$
- 7500 (15x100x5) 12 months P.G. diplomas p.a. In state institutes
- **Expansion of NIAM, MANAGE etc.,**
 - Institutions like NIAM, MANAGE and Agricultural Economics/Agribusiness departments of State Agricultural Universities should be strengthened. NIAM needs to be expanded on the lines of ICAR.
 - NIAM should establish its linkage with state agricultural marketing boards. All efforts needs to be made that each state has State Agricultural Marketing Institute on the pattern of NIAM.
 - State Agricultural Universities who have so far not initiated degree and diploma courses in agri-marketing and agribusiness, should also introduce the same.

Public- private partnership mode

- The delivery of training and manpower development services needs to incorporate private sector players as partners
- progressive farmer associations and clubs
- Farmer co-operatives and self help groups
- Producer companies
- Input dealers
- Non government organizations
- Private media
- Private banks
- Private companies
- Microfinance and other funding agencies

Estimated fund requirement

At the levels proposed the additional funds required will be of the order of rs 1000 crores for the plan period.

If the level of farmers training is increased five fold i.e. to cover 60 lakh farmers (less than 1% of the farmers) the cost will go up to around 1500-1600 crores

REDUCING WASTAGES

WAREHOUSING & BULK HANDLING

Recommendations

1: Target for Capacity Creation: Create min 35 m MTs of additional storage capacity during 12th Plan

2: FCI 10 Year Guarantee Scheme

- Keeping in view the need as well as the proposed incentives for private capacity creation, the Group recommends that the FCI would need to create 12 million MT capacity in the 12th Plan
- Of the above, 2 million MT capacity creation is proposed for silo storage

3: Extend & enhance Subsidy under Grameen Bhandaran Yojana

- Subsidy to be enhanced to 50% against present 33.33% in respect of NE States & hill areas, women farmers, their SHGs/Cooperatives, SC/ST farmers, their SHGs, cooperatives
- subject to a maximum subsidy ceiling of Rs.6 crore
- Subsidy to be enhanced to 40% instead of present 25% in respect of all categories of farmers (other than women farmers), Agricultural Graduates, Cooperatives, CWC/SWCs
- subject to a maximum subsidy ceiling of Rs.6 crore
- Subsidy to be enhanced to 25% instead of present 15% in respect of all other categories of individual, Companies & Corporations
- subject to a maximum subsidy ceiling of Rs.3.75 crore
- Self financing option may be allowed to Private sector/CWC/SWCs/APMCs, etc.

4: Revisions to to Grameen Bhandaran Yojana

- Cost Norm to be revised
- Godowns up to 1,000 MT: @ Rs.3500/MT
- Above 1,000 MT: @ Rs.3000/MT
- NE States/Hilly Areas: @ Rs.4000/MT

- Capacity restriction to be relaxed
- Admissible capacity may be made 50,000 MT
- Lock in Period may be reduced to 2 years instead of present 5 years.

5: Income Tax Incentives: Incentivize private sector to invest through attractive long term lease options & tax sops

- Present incentive under Section 35 AD of the Income Tax Act inadequate
- Only provides deferral of tax and no tax relief
- Though warehousing declared infrastructure no amendment made to Income Tax Act
- Necessary notification needs to be issued by Finance Ministry so as to be eligible for all benefits available for infrastructure projects.

6: Loans: Extend Pledge loan and negotiable Warehouse Receipt facility at liberal interest rates

- Loans for construction of warehouses for agri commodities to be considered as priority sector lending eligible for subsidised interest rate.
- NABARD should also start a special window for long term concessional loans
- The facility of loan to farmers on pledge of Negotiable Warehouse Receipts at 7% rate of interest at par with crop loan.

7 Land

- Land being a vital component for warehousing and with increasing cost and reduced availability of land, State Governments may acquire land and establish Agriculture Economic Zones and make land available on lease basis for warehousing and other allied activities.
- State Governments may make land available in Regulated Markets on lease for setting up of Warehouse.
- Regulatory approvals, such as land conversion to be made automatic
- Warehouses may be declared as mandis

8: Role of Private Sector

- Paradigm shift needed in procurement and storage Policy

- Role of Private Sector limited due to high procurement by FCI/State Agencies

GOI/State procurement

- 25 out of 45 million MT of Marketed Surplus in Wheat
- 35 out of 65 million MT of Marketed Surplus in Rice
- Government's role in grain markets should be reduced

9: Private Sector Outsourcing - Achieve cost efficiency by outsourcing procurement, storage and distribution of food grains.

- The present FCI 10 Year Guarantee Scheme takes the entire investment risk on to GOI/FCI without any significant private sector efficiencies
- GOI is needlessly committing to make payments irrespective of utilization
- If the entire package of services, including procurement, storage and preservations is outsourced then Private sector can be held accountable for both quantity and quality
- Will generate huge cost efficiencies, especially critical in the context of an ambitious Food Security bill

10: Incentivizing the Private Sector

- The subsidy scheme administered by NABARD should not have a cap, and get linked to capacity creation.
- State Governments should facilitate permissions for warehouse construction E.g. easy land conversion and regulatory approvals.

11: Bulk Storage Policy

- Fix target of 5 million MT
- CWC may be incentivized to build 2 million MT with the remaining investment coming from the private sector
- Guarantee scheme as in the BOO project is too costly for replication and should not be expanded
- Bulk containers must be designed to support two way movement.
- Current design needs review

12: Incentives for Bulk Storage

- Organized retail/roller flour mills/large poultry units/ large export houses could be good candidates for investing in silos.
- Incentivize not just silo investment but also investments in testing, handling and transportation in bulk
- Special package of incentives including viability gap funding and one time capital subsidy would be more cost effective than the Guarantee scheme
- Unit cost to be fixed at Rs. 5000/MT against Rs. 3000/MT for conventional storage
- State Governments should declare silo complexes as deemed mandis and exempt such complexes from mandi cess and arthia commission

13 Warehouse and Silo may be treated as virtual markets to avoid double transportation

14 Agri-marketing Information system like AGMARKNET and NHB to be made more user friendly

15 Agricultural markets and related infrastructure including private markets, warehouse and cold chain to be considered as 'Infrastructure Projects' for concessional credit

16 Extending Status of Warehouse to Cold Storages / CA Storages under the of scheme of warehousing Receipt System even for horticulture Produce of long duration storage such as potato, onion, apples etc

17 Organized logistic players, processors and retailers are to be encouraged to develop markets in PPP mode

SECONDARY AGRICULTURE

BIOMASS UTILIZATION

Recommendations

The technical advisory committee on secondary agriculture (2008) recommended the following:

- Ministry of Food Processing be renamed as "Ministry of Bio-Processing" to include both food and non-food agro- based industries and this Ministry assume the primary role of coordinating activity with all States *including creation of regional offices of secondary agriculture (ROSA) as well as assuming financial responsibility.*
- For seeking and transferring relevant technologies, and providing training in all aspects of agro-businesses value chain - including marketing and opening new export opportunities for the Indian bioproducts - a new Integrated Bioprocessing Technology Institute (IBTI) needs to be established.
- A minimum of \$2 Billion investment (Secondary Agriculture Innovations Fund, SAIF) by the Government would be necessary to facilitate building Secondary Agriculture Industries across the country during the 11th 5-year plan. This fund should be managed by an autonomous special purpose vehicle (Secondary Agriculture Innovations Fund, Ltd.) with the sole purpose of building innovative Bio-processing Ventures, each operating as a business, under the umbrella of the Ministry of Bio- Processing.
- examples of high value-addition Industries needs to be set up in each sector. The cost of such setups must be borne 50% by the Central Government, 10% by the State and 40% by the new entrepreneur. Such units need to be World-class and internationally competitive, with a single Government interface provided by SAIF.

Sub-group recommendations

- As far as possible, the existing agriculture land should be spared from, and the wastelands should be used for, growing biofuel and biomass crops. Land availability for biofuel crops is a crucial issue globally and to meet 5% blending demand by 2015, almost additional 100 Mha land area is needed across the world.
- Although total land available may be above 100 Mha but all of it can not be developed for biofuel crops . For heat or biopower production, through plants such as biomass gasifiers, focus should be on the use of agricultural waste.
- Govt. agencies assigned the task of plantation on wastelands should work in tandem with local people, NGOs and voluntary groups and create a sense of ownership among them.

- Involvement of women, landless leasee farmers and labourers, marginal and small-scale farmers and other weaker sections of the society is needed
- There is need for Diffusion of Biomass utilization technologies in non-formal industries like
- *Arecanut processing*
- *Jaggery making*
- *Tobacco curing*
- *Silk reeling*
- *Cooking/heating stoves for hotels , bakeries and community halls*
- *Lime/pottery kilns*
- *Brick kilns*
- *drying systems*
- *Processing of various food products including cardamom, cashew, coconut, rice, cocoa*
- *Rubber sheet smoking*
- *Rubber band vulcanization*
- *Ayurvedic medicine preparation*

Meat based Industry

- Legal support mechanism to facilitate the gainful utilization of the culled buffalo and surplus male buffalo.
- Amend outdated laws: A good example of a shortsighted regulation is the restriction on slaughtering animals for production of veal in order to maintain or increase the overall productive population. Such action can cause the market to develop a negative attitude towards slaughtering, which may affect their value at a later date. Such regulations have good intentions but are bound to cause long-term damage. This provision alone is a major impediment in utilizing male buffalo calves for lean meat.
- inclusion of additional Districts under Foot and Mouth Disease Control Programme (FMD-CP) in the XII Five Year Plan.

- Need for consistent and uniform Policy across different States for livestock slaughter for export; Male Buffalo Calf Rearing for meat export and leather production.
- Restoration of DEPB rates for frozen Buffalo meat.

Animal byproducts industry

- Inclusion of meat as an eligible agriculture product in the Vishesh Krishi and Gram Udyog Yojana (Special Agricultural and Village Industry Scheme)
- Restoration of financial assistance for up-gradation of public/municipal slaughter houses/processing plants engaged in export production in APEDA's Financial Assistance Scheme (FAS) (to 1997-2002 FAS level). These facilities must build links with secondary animal products processing industries to capture more value from the same animal and reduce environmental pollution.
- Restoration of financial assistance for up gradation of private slaughter houses/processing plants for export production in APEDA's Financial Assistance Scheme (to better than 1997-2002 FAS level).
- Inclusion of Buffalo meat under APEDA's Transport Assistance Scheme for new markets in Africa / CIS where freight cost from India for refrigerated containers is much higher than from competing countries.
- Meat is an agricultural product and it should be recognized as such to buffer the capacity of farmer for income under stress conditions.
- Various tax incentives and subsidies for agro development should be equally applicable to the meat sector.
- Government needs to take an active role to organize the meat processing industries as it is not only important for the public health and the environment, it is vital for developing secondary industries using this valuable bioresource abundant in India.
- The need for cold storage houses and inspection of slaughterhouses to maintain sanitary condition is vital for the organized development of this industry which is rapidly growing.

Bioenergy promotion

Short-term Policies (1 to 5 years) could be:

- i) enhanced utilization of crop residues and wood waste,

- li) information dissemination,
- iii) niche applications (e.g. remote and biomass rich locations),
- Iv) technology transfer (e.g. high pressure boiler),
- v) co-ordination among institutions,
- vi) demonstration projects,
- vii) participation of private sector, community and NGOs,
- viii) waste land development, and
- ix) subsidy to biomass technologies to balance the implicit subsidies to fossil fuels.

Medium Term (5 to 20 years):

- i) R&D of conversion technologies,
- ii) species research to match agroclimatic conditions,
- iii) biomass Plantation,
- iv) scale economy based technologies,
- v) Local Institutional Developments, and
- vi) removal of distortions in fossil energy tariffs.

Long term (over 20 years):

- v) Infrastructure (logistics, T&D),
- vi) ii) multiple biomass energy products (e.g. gas, liquid, electricity),
- vii) iii) institutions and policies for competitive biomass energy service market, and
- viii) land supply for biomass generation

MEDICINAL & AROMATIC PLANTS

After detailed discussions the Sub-group has made the following recommendations:

1. Medicinal Plants to be treated as Agricultural Produce

There is need to encourage cultivation of the medicinal plants as the sustained availability of medicinal plants from the wild has certain limitations. Currently MAPs whether cultivated or collected from the wild are not categorised

as “agricultural produce” but as “forest produce” even though a number of species are being cultivated on farmlands. The cultivator has to register his “crop” with the Forest department and the latter after inspection of the crop issues a certificate of cultivation (CoC) and later a transit pass for transportation of the produce which gets checked and stamped at every forest check post. These are time taking procedures and create unnecessary hurdles for farmers who are also liable to pay sales tax on the produce. Giving it the status of agricultural Produce would help the marketing of MAPs

2. Minimum Support Price (MSP) to Medicinal Plants

Minimum Support Price for the medicinal plants is important for preventing exploitation of farmers at the hands of traders and other middlemen. Ministry of Panchayati Raj had constituted a Committee on ownership, price fixing, value addition and marketing of minor forest produce under the Chairmanship of Shri T. Haque, Member, Planning Commission. The Committee has submitted its report in May, 2011. The Committee has recommended for MSP for minor forest produce as follows :

The minimum support price should be fixed at the national level by a specially constituted Central Price Fixation Commission, comprising one chairperson who will be an expert in the field of tribal and rural development and three other members having experience in the relevant field. The broad functions of the Commission would be the following:-

- i. Fixation of minimum support price as bench-mark and setting quality standards.
- ii. Formulation of broad guidelines for effective implementation of the MSP scheme.
- iii. Monitoring and evaluation of the aforementioned scheme; suggesting corrective measures from time to time.

While fixing MSP for each crop season, the Commission shall have in depth consultation

with the Ministry of Tribal Affairs, Ministry of Panchayati Raj, Ministry of Environment & Forests, Department of AYUSH, tribal leaders from all the

concerned regions, representatives of national level merchant/trade and industry associations dealing with MFPs, state level agencies and the TRIFED. The administrative ministry for the Commission will be the Ministry of Tribal Affairs

Calculation of MSP

While the Commission would develop appropriate methods for calculation of MSP for selected MFPs, some important factors to be considered are (i) labour time used in the collection, (ii) the prevailing wage rate, (iii) transportation cost, if any (iv) market prices and (v) demand – supply analysis. Under no circumstances, the gatherers of MFP should be paid less than the existing minimum wages under the MGNREGA or minimum wages in agriculture sector, whichever is higher.

The MSP operation in the tribal areas should be seen as an anti-poverty measure, as it addresses the livelihood of the poorest people in the country

Similarly, for the cultivated medicinal plants also there is a need to have MSP to protect the farmers from the exploitation from the traders and market fluctuation and a similar mechanism for deciding minimum support price. In fact MSP for the species common to cultivation and collection should be the same.

3. The Support of Medicinal Plants through Infrastructure of Ministry of Agriculture

Over a period of time, Ministry of Agriculture has developed a network of infrastructure for extension, providing inputs to the farmers, research and marketing of agricultural produce. It is proposed that the same infrastructure may also be used by the medicinal plants sector for providing inputs and extension, marketing and research support like Indian Council of Agricultural Research (ICAR), Krishi Vigyan Kendras (KVKs), Agricultural & Processed Food Produce Export Development Authority (APEDA), Agricultural Market Information Network (AGMARKNET), Department of Agriculture & Cooperation. Agricultural Universities etc should extend full support to medicinal plants sector.

4. Market Channels and Market Information Services

Market Information Services and Market Information Services are characterised by lack of domain information on techniques and commercial

opportunities, absence of Resource Centers with a regional MAP crop focus and no access to international markets

Currently marketing of MAPs happens through Mandis & commodity boards, Agricultural produce marketing committees etc. There are numerous intermediaries.

The following steps are suggested in order to fill this gap:

- Promotion and information dissemination through IT dedicated mechanisms for procurement of MAPs should be built along with a Minimum Support Price.
- networked Agri Mandis for MAPs
- Database of Cultivators and growing CoOps Success stories of Contract Farming with Incentives like other Agri crops
- Contract Extractions (PHM)
- Speciality Warehousing & Supply Chain development
- Integration of all Portal with techno commercial information
- Creating an on line MAPs Trade Exchange
- Integration with Krishak Call Centeres, KVKs etc

There are examples from states like Uttarakhand where the State Forest Development Corporation have started both fixed and floating mandis which procure MAPs from the doorstep of gatherers thus eliminating middlemen entirely and also ensuring remunerative prices. Such efforts could be replicated in other states too.

5. Develop a Database of availability, cultivation, price, demand and supply for MAPs

Production and trade statistics are not updated regularly, HS Codes for a large number of MAPs are not available which are being covered under N.E.S.(*Not Exactly Specified*) at present leading to a lot of ambiguity in export/import figures of MAPs. Hence it is suggested that a mechanism for transparent market information of demand and supply, integrating/linking various markets and making the data network easily accessible for pricing should be

developed. This will also help to re-evaluate government policies and schemes and to take appropriate measures to streamline and encourage the marketing of MAPs.

6. Amendment of Prohibited List

29 plants are in the “prohibited list”(out of which 16 are MAPs) and have the following additional requirements:

- Registration of Trader(Buyer) with the Forest department for procuring cultivated raw material
- Trader(Buyer) has to apply for Legal Procurement Certificate(LPC) with Forest Department for exporting cultivated raw material
- Inspection of raw material and sealing of sacks has to be done in the presence of Forest Department Staff
- Levy of royalty by the forest department

The prohibited list itself needs to be amended considering the fact that many of these species are no longer available in the wild but are being cultivated. By placing MAPs in the category of Agricultural produce in addition to streamlining the above procedures cultivators will get exempted from Income Tax and traders will get exempted from Sales Tax/VAT.

7. Strengthen Infrastructure

MAPS are facing the problem of inadequate warehouses and cold storages facilities; lack of post harvest machines required for drying, grading, powdering and packaging; Lack of specific kind of vans (containers, refrigerated vans etc.) for transportation of planting material; Lack of transportation facilities in remote areas cultivating MAPs; Lack of auction centers for cultivated and wild MAPs for local collectors and cultivators; Lack of Laboratories for testing and analysis of raw material etc. Infrastructure already created under National Horticulture Mission, National Horticulture Board and other Agricultural

Departments/Agencies should be made available to medicinal plants cultivators and collectors.

8. Capacity Building

Farmers and collectors need comprehensive training on all aspects of MAPs. The sector itself needs persons trained in all aspects of medicinal plants e.g. taxonomy, cultivation, conservation, processing, post harvest management, certification trade both domestic and international, biodiversity, TK related uses, protection of IPRs, HS codes, international agreements and treaties like CITES, Nagoya Protocol etc. Besides we need to have an institutional mechanism to impart training for the implementing agencies of NMPB schemes and design courses for training, undertake state of art research and act as a referral centre for all dimensions of medicinal plants.

Overall Recommendations for Secondary Agriculture

- Enhanced utilization of crop residues and wood waste
- Information dissemination
- Niche applications (e.g. remote and biomass rich locations)
- Technology transfer (e.g. high pressure boiler)
- Co-ordination among institutions
- Demonstration projects
- Participation of private sector, community and NGOs
- Waste land development
- Subsidy to biomass technologies to balance the implicit subsidies to fossil fuels.
- Encourage bye-product utilisation and value addition from crop residues
- Subsidise products such as ethanol, bio-diesel and rice bran oil to enhance farm incomes and minimize costly imports

TRADE POLICY

BARRIERS TO INTERNAL TRADE

Recommendations

- The National Commission on farmers has argued for abolition of all indirect taxes on
primary agricultural products
- The working Group recommends:
 - The EC Act should be revisited and if considered necessary, should be kept on the statute books only for emergency use
 - State and local taxes on agricultural commodities should be rationalized and made uniform
 - Market fees should not be imposed as a levy on all agricultural produce from a geographical area, but APMCs should only levy a service charge for use of the market infrastructure
 - No market fee should be levied on perishable commodities like fruits, vegetables and milk

INFRASTRUCTURE & POLICY SUPPORT FOR EXTERNAL TRADE

Recommendations for the XII Plan – Measures & Action Plan

1 Uniform Policy for Export of Agriculture Products:

Since export of agriculture products from India forms a small portion of the total production in the country for most crops, the exports are not likely to impact significantly the prices in domestic markets. Export Policy for agro products therefore need not be linked to seasonal changes in the pricing in the domestic market. When the domestic prices are high, the market forces are expected to take care of the domestic/ export flows of the produce. However, if the policy for export prohibition is not declared, some of the exporters may be able to meet their export market commitments.

The export of commodities like Non Basmati Rice, Wheat and Onion may be linked to production volumes/projections in the country with some minimum cut offs instead of price fluctuations. For example, in case of rice where minimum export price (MEP) is being declared by the Government from time to time for export of Basmati Rice, the same MEP may be left to regulate the export of all premium varieties of rice. If required, a

quantitative ceiling in addition may also be prescribed such as 6 million MT per annum for Basmati and all other premium Non Basmati Rice together which can command the price equivalent to MEP or more in the global market.

2 Development of Multi-Modal Transportation :

Besides developing refrigeration technology and protocols for sea transportation of fruits and vegetables, application of similar technologies / protocols of transportation by road / rail should also be developed since multi modal transportation is required for most products in view of the production areas being away from the sea ports. Neighbouring countries like Pakistan, Bangladesh, Nepal, Bhutan, Myanmar and China could be targeted through inter-modal transportation system, with complementary roles to be played by road transport and carriage through railways.

3 Promoting Voluntary Adoption of Quality Systems

One of the major challenges for India is to raise the level of quality building and quality assurance measures. Regulatory mechanism by the government and its agencies would not bring in the same results as a voluntary adoption of quality systems like ISO, HACCP would do.

Food safety is a prime concern in the international trade in food products. These safety concerns are spilling over to the domestic markets as well. These concerns can be effectively addressed only through proper backward linkages, hygienic processing, packaging, proper post harvest practices, harvest and pre-harvest practices right down to plant breeding, animal health and irrigation practices. Lack of infrastructure, lack of institutional coordination, shortage of technical skills and equipments, lack of updated standards, lack of awareness amongst the food handlers are

some of the key constraints that need to be addressed early to maintain the food processing industry's capability to meet the food safety requirements both domestically and globally.

There is an urgent need to increase awareness and adherence to Good Agricultural Practices to meet the quality specifications of the international market.

4 Strengthening of Laboratories for Testing of Raw Materials and Processed Food Products

There is an increasing need to provide greater assurance about the safety and quality of food to consumers both in the domestic and the international markets. Though, a large number of testing laboratories are reported to be existing within the ambit of BIS, Agmark and Health Departments of the Central Government besides Departments of the State Government and municipal authorities. However, limited coordination between various food testing laboratories has led to inefficient utilization of the food testing infrastructure. Further, many of these laboratories do not have basic facilities to test antibiotic residues, heavy metal contamination and other toxic contaminants in food products.

For the international marketing, we need to have a network of food testing laboratories which have accreditation as per internationally accepted systems. The infrastructure available at these laboratories needs to be strengthened for testing of raw materials and processed food products in accordance with internationally accepted protocols. The assistance currently available under the scheme of APEDA for Development of Quality is not adequate. So far under this Scheme 12 laboratories (6 in public sector and 6 in private sector) have been provided financial assistance for strengthening their infrastructure.

We need to invest in post-harvest and laboratory infrastructure, quality, food safety and training. We also need to re-orient our own extension machinery with an element of motivation.

- 5 India needs to standardize pre and post harvest management system and harmonize them with the international standards. Technical experts should participate in all the Codex and SPS/TBT related meetings and conferences.

Overall Policy Options for Reforms in Agricultural Marketing

- Agricultural Marketing may be moved to the concurrent list in the Constitution
- Central Government may enact a “Inter-State Agriculture Produce Trade and Commerce Regulation Act” under entry 42 (Inter-State Trade and Commerce) of the Union list
- An Authority to promote and regulate Inter-State Commerce may be set up as envisaged under Art. 307 of the Constitution
- GoI should amend the Forward Markets Commission Act and bring Spot Exchanges under its Regulatory control
- Fruits, Vegetables, Milk and other perishable commodities should be de-notified from the APMC Acts or exempted from market fees
- Procurement price of FCI for foodgrains should be inclusive of local taxes

CHAPTER 10

PROPOSED OUTLAY

Investment on Infrastructure Proposed in XI Plan

- Total Investment requirement = Rs. 64,312 Crores
 - Besides Food Processing Sector = Rs. 43,000 Crores
 - Rs. 12,000 Crores can flow from RIDF
 - Rs. 5,000 Crores from APMCs & SAMBs
 - Rs. 30,625* Crores from Private Sector
- * Need for proactive Government Policy to attract Private Sector Investment

Restructuring of DAC Schemes

- Currently, DAC implements 51 schemes out of which 8 schemes pertain to marketing.
- These schemes are operated separately by DMI, NHM, Dept. of Animal Husbandry, NHB
- Besides other departments such as Dept. of Consumer Affairs, Dept. of Commerce, APEDA and other Commodity Boards, NMPB, and MOFPI etc. also have schemes to support marketing
- There is a need to converge and restructure the schemes to make them more effective and user friendly
- To incentivize private sector investment, most schemes should be implemented under PPP mode, with VGF where necessary.
- To focus attention on marketing, it is felt that all such schemes should be regrouped under one omnibus Scheme called “Agricultural Marketing” with 7 sub-heads as given hereinafter.

S. N.	Description of Schemes	No. of Units	Avg. Unit Cost (Rs. crores)/Unit	Total (Rs. Crores)	Rate of Subsidy/ Grant	Budgetary Allocation	Remarks
1	Development of Marketing Infrastructure						
	1.1 Terminal markets	40	200	8000	25-40%	2400	Through PPP
	1.2 Wholesale markets	100	100	10000	25%	2500	
	1.3 Upgradation of regulated markets	1000	5.0	5000	25%	1250	
	1.4 Rural periodic markets	2500	0.3	750	25%	187.5	
	1.5 Livestock markets	500	0.5	250	50%	125	
	1.6 Specific Comodity Markets	100	25	2500	40%	1000	
	1.7 Grading Standardisation and Certification	200	3.0	600	40%	240	
2	Virtual markets						
	2.1 Market Information Dissemination	4500	0.1	450	100%	450	To cover all regulated markets
	2.2 Spot Exchange	1000	0.5	500	65%	325	Electronic Display Boards & promotion efforts
	2.3 Market Research/Survey	50	2.0	100	100%	100	Regular Commodity Surveys & Spl. Reports
	2.4 Market Led Extension & Consumer Awareness	-	-	50	100%	50	
3	Warehousing and Bulk Handling						
	3.1 Cold Chain Development	1500	6.0	9000	40%	3600	Each unit Avg. 5000 MT
	3.2 Grameen Bhandaran Yojana (Revised)	35 m MT	Rs. 3000/MT	10500	40%	4200	
	3.3 Silo Storage	4 m MT	Rs. 5500/MT	2200	25%	550	
	3.4 Integrated Bulk Logistics	1 m MT	Rs. 9000/MT	900	25%	225	
	3.5 Modernization of existing warehouses	1 m sqft	Rs. 4000/sq. ft.	400	25%	100	with racking and pelletization
4	Linking Farmer to Market						
	4.1 Development of Integrated Value Chain	100	25	2500	50%	1250	
	4.2 Support to Farmer Groups	300	0.3	90	100-25%	45	Managerial Support for 3 years
5	Training and Capacity Building						
	5.1 Skill Development	20000	0.005	100	100%	100	
	5.2 Support to Training Institutes	25	8.0	200	100%	200	
6	Secondary Agriculture						
	6.1 Medicinal & Aromatic Plants	-	-	300	Lumsum	300	Project based
	6.2 Organic Farming	-	-	200	Lumsum	200	Project based
	6.3 Stevia	-	-	200	Lumsum	200	Project based
	6.4 Biomas and Residue Utilisation	20	50	1000	40%	400	Project based
7	Trade Facilitaiton						
	7.1 Promotion of International Trade Practices	-	-	30	Lumsum	30	
	7.2 Traceability and Certification	-	-	100	Lumsum	100	
	7.3 Awareness Generation	-	-	30	Lumsum	30	
	7.4 Export Specific Infrastructure	-	-	50	Lumsum	50	
Grand Total				56,000.00		20,207.50	